REGENTS' FINAL

MAY 2022

UCSF NEW HOSPITAL AT PARNASSUS HEIGHTS

Environmental Impact Report

State Clearinghouse Number 2021070547

Volume 2 of 2 (Chapters 8 and 9)

UCSF

University of California
San Francisco

Artist's Rendering

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Prepared for
University of California, San Francisco
Real Estate - Campus Planning
654 Minnesota Street
San Francisco, California 94143-0287

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Comments and Responses

8.1 Introduction

8.1.1 Purpose of the Comments and Responses Document

The University of California, San Francisco (UCSF) is proposing to construct a new hospital and related improvements at the east end of UCSF's Parnassus Heights campus core, collectively known as the New Hospital at Parnassus Heights project (NHPH). The NHPH would increase inpatient beds at the Parnassus Heights campus site; address seismic safety requirements and meet other regulatory requirements and industry standards for contemporary hospitals; accommodate modern technologies; and enhance functionality and efficiency at the campus site. Construction of the NHPH would begin in 2023 with the proposed New Hospital and majority of related improvements completed and operational by the end of 2030, and completion of the remaining related improvements by 2034. A minor amendment to the UCSF 2014 Long Range Development Plan (2014 LRDP) would be required to adjust the Reserve boundary and maintain the Reserve at a minimum of 61 acres.

As required by the California Environmental Quality Act (CEQA), this EIR: (1) assesses the potentially significant direct and indirect environmental impacts, as well as the potentially significant cumulative impacts, associated with implementation of the NHPH; (2) identifies feasible means of avoiding or substantially lessening significant adverse impacts; and (3) evaluates a range of reasonable alternatives to the proposed NHPH, including the required No Project Alternative.

The University of California (University or UC) is the "lead agency" for the environmental review of the NHPH and for the minor LRDP amendment. UC is governed by the Board of Regents of UC (UC Regents), which under Article IX, Section 9, of the California Constitution, has "full powers of organization and government" subject only to very specific areas of legislative control. The UC Regents has the responsibility for certifying this Final EIR, approving design of the New Hospital and the minor LRDP amendment.

As described in greater detail under Section 8.1.2, Environmental Review Process, below, UCSF published a Draft EIR on the proposed NHPH on December 16, 2021, and the public review period for that document ended on February 14, 2022. The Draft EIR, as revised (see consolidated Draft EIR in Volume 1 of this Final EIR), together with this Comments and Responses document (Volume 2 of this Final EIR), and appendices to these documents – see Section 8.1.2.3, below, constitute the Final EIR for the proposed NHPH in fulfillment of

requirements of CEQA and consistent with CEQA Guidelines Section 15132. The Final EIR will be considered by decision-makers before deciding whether to approve the design of the New Hospital and the proposed minor LRDP amendment and reflects the Lead Agency's independent judgment and analysis of the physical impacts of the project on the environment (CEQA Guidelines, Section 15090).

This Comments and Responses document provides written responses to comments received during the public review period for the Draft EIR. It contains a list of agencies, organizations and persons that commented on the Draft EIR made in response to comments received; copies of comments received on the Draft EIR; and written responses to those comments. It also contains revisions to the Draft EIR to clarify or correct information in the Draft EIR. Section 8.1.3, Method of Organization, below, provides a description of the overall contents and organization of this Comments and Responses document.

8.1.2 Environmental Review Process

8.1.2.1 Notice of Preparation and Public Scoping

On July 28, 2021, a Notice of Preparation (NOP), including an Initial Study, was published for the NHPH EIR. A 30-day public comment period ended on August 27, 2021. A copy of the NOP/Initial Study is included in **Appendix A** to this Final EIR. A scoping meeting was held on August 17, 2021 to accept public input on environmental topics to be analyzed in the EIR and approaches to the impact analyses. Due to the COVID-19 pandemic, the scoping meeting was held via Zoom. Written comments received on the NOP, and a transcript of the scoping meeting, are included in **Appendix B** to this Final EIR.

8.1.2.2 Draft EIR Public Review

On December 16, 2021, UCSF released for public review the Draft EIR on the NHPH. A 60-day public review and comment period on the Draft EIR began on December 16 and closed on February 14, 2022. During the public review period, UCSF received one comment letter from a governmental agency, five comments letters from organizations, and 21 comment letters from individuals. UCSF also held a public hearing on January 19, 2022 via Zoom to receive oral comments on the Draft EIR.

8.1.2.3 Final EIR: Consolidated Draft EIR and Comments and Responses Document

This Final EIR consists of two parts (Volumes 1 and 2):

- Volume 1 of this Final EIR is a consolidated Draft EIR that incorporates staff-initiated changes and revisions made in response to comments that were received on the Draft EIR; and includes associated appendices.

- Volume 2 of this Final EIR consists of this Comments and Responses document, as described under Section 8.1.1, above, and Section 8.1.3, below; and includes associated appendices.

The UC Regents will hold a public hearing to consider whether to certify the Final EIR as complying with the requirements of CEQA, and whether to approve the design of the New Hospital and the minor LRDP amendment. UCSF will notify all public agencies that submitted comments on the Draft EIR of the availability of the Final EIR at least 10 days prior to the UC Regents meeting on the Final EIR (CEQA Guidelines, Section 15088(b)). Additionally, as a courtesy, UCSF will also notify all others who submitted comments on the Draft EIR of the availability of the Final EIR at least 10 days prior to the UC Regents meeting on the Final EIR.

The UC Regents must certify the Final EIR before deciding whether to approve the design of the New Hospital and the minor LRDP amendment. Prior to approval of a project for which the EIR identifies significant environmental effects, CEQA requires the adoption of Findings of Fact (CEQA Guidelines, Sections 15091 and 15092). If the Findings of Fact identify significant adverse impacts that cannot be avoided or substantially lessened, the UC Regents must adopt a statement of overriding considerations for those impacts (CEQA Guidelines, Section 15093(b)).

8.1.3 Method of Organization

This Comments and Responses document is organized as follows:

- Chapter 8, *Comments and Responses*, organized as follows:
  - Section 8.1, *Introduction*, describes the purpose of the Comments and Responses document, the environmental review process, and the organization of this document.
  - Section 8.2, *Agencies, Organizations and Individuals Commenting on the Draft EIR,* lists all agencies, organizations, and persons that submitted written and/or oral comments on the Draft EIR during the public review period.
  - Section 8.3, *Master Responses*, contains comprehensive responses on topics that were discussed frequently in public comments on the Draft EIR.
  - Section 8.4, *Written and Oral Comments on the Draft EIR, and Responses to Comments*, contains all comment letters received, and a copy of the transcript of the public hearing held, during the public review period for the Draft EIR, and the UCSF's responses to significant environmental points raised in these letters and the public hearing.
  - Section 8.5, *Revisions to the Draft EIR*, presents changes and revisions to the Draft EIR. UCSF made changes and revisions to the Draft EIR either in response to comments received on the document, or as necessary to clarify statements and conclusions made in the document. None of the changes and revisions in Section 8.5 substantially affect the analysis or conclusions presented in the Draft EIR.
- Chapter 9, *Mitigation Monitoring and Reporting Program,* presents the Mitigation Monitoring and Reporting Program (MMRP) required under CEQA, which identifies the specific timing and roles and responsibilities for implementation of adopted mitigation measures.

8.1.4 Draft EIR Recirculation Not Required

CEQA Guidelines Section 15088.5 requires Draft EIR recirculation when "significant new information" is added to an EIR because the EIR is changed in a way that deprives the public of a meaningful opportunity to comment on a project's significant environmental effects or feasible mitigation measures or alternatives to reduce or avoid such effects that are not proposed for adoption. The comments, responses, and Draft EIR revisions presented in this document do not constitute such "significant new information;" instead, they clarify, amplify, or make insignificant modifications to the Draft EIR. For example, none of the comments, responses, and Draft EIR revisions disclose new or substantially more severe significant environmental effects of the proposed NHPH, or new feasible mitigation measures or alternatives considerably different than those analyzed in the Draft EIR that would clearly lessen the proposed NHPH's significant effects which UC declines to adopt. Recirculation of the NHPH Draft EIR is therefore not required.

8.2 Agencies, Organizations and Individuals Commenting on the Draft EIR

This Comments and Responses document provides written responses to comments received on the Draft EIR during its public review period (December 16, 2021 through February 14, 2022), including all written comments submitted either by letter or email, and all oral comments presented at the public hearing for the Draft EIR.

This section lists all agencies, organizations, and individuals ("persons") who submitted comments on the Draft EIR. Persons who submitted written comments are grouped according to whether they represent a public agency, organization, or an individual citizen, and persons who provided oral comments at the public hearing are also listed.

For each commenter on the Draft EIR, the person's name, agency or organization as applicable, comment format, comment date, and a commenter code are provided. The commenter codes were assigned to facilitate the preparation of responses, and there is a unique commenter code for each comment letter, email, and public hearing transcript comment based on the name of the agency, organization, or individual submitting the comment. Comments submitted by mail, email, or orally at the public hearing (as transcribed in the official public hearing transcript) are all coded and numbered the same way.

The commenter code for comments on the Draft EIR begins with a prefix indicating whether the commenter represents a public agency (A), an organization (O), an individual (I), or a speaker at the public hearing (PH). This is followed by a hyphen and the acronym of the agency or organization, or the individual's last name. Within each category, commenters are listed in alphabetical order by code.

The commenter codes are used to identify individual comments on separate topics within each comment letter, email, comment card, or public hearing transcript. Each individual comment from each commenter is bracketed and numbered sequentially following the commenter code. The bracketed comments and corresponding comment codes are shown in the margins of the comments. There is a unique comment code for each distinct comment.

8.2.1 List of Commenters on the Draft EIR

8.2.1.1 List of Public Agencies Commenting in Writing on the Draft EIR

Table 8.2-1, below, provides a list of all public agencies that commented in writing on the Draft EIR.

TABLE 8.2-1
PUBLIC AGENCIES COMMENTING IN WRITING ON THE DRAFT EIR

No.	Commenter Code	Name of Person and Agency Submitting Comments	Comment Format	Comment Date
1	A-SFP	Rich Hillis, Director of Planning, San Francisco Planning Department	Letter	02/14/2022

SOURCE: ESA, 2022

8.2.1.2 List of Organizations Commenting in Writing on the Draft EIR

Table 8.2-2, below, provides a list of all organizations that commented in writing on the Draft EIR.

TABLE 8.2-2
ORGANIZATIONS COMMENTING IN WRITING ON THE DRAFT EIR

Commenter Code	Name of Person and Organization Submitting Comments	Comment Format	Comment Date
O-TL1	Thomas N. Lippe, Law Offices of Thomas N. Lippe, APC[a]	Letter	02/14/2022
O-TL2	Thomas N. Lippe, Law Offices of Thomas N. Lippe, APC[a]	Letter	02/14/2022
O-SM	Patrick M. Soluri, Soluri Meserve, A Law Corporation[b]	Letter	02/14/2022
O-GGAS	Whitney Grover, Chair, GGAS San Francisco Conservation Committee, Golden Gate Audubon Society	Letter	02/14/2022
O-IUEC	Greg Hardeman, Business Representative/Recording Secretary, International Union of Elevator Constructors	Letter	02/04/2022

NOTES:
[a] Representing San Franciscans for Balanced and Livable Communities
[b] Representing the Parnassus Neighborhood Coalition

SOURCE: UCSF, 2022

8.2.1.3 List of Individuals Commenting in Writing on the Draft EIR

Table 8.2-3, below, provides a list of all individuals that commented in writing on the Draft EIR.

TABLE 8.2-3
INDIVIDUALS COMMENTING IN WRITING ON THE DRAFT EIR

Commenter Code	Name of Individual Submitting Comments	Comment Format	Comment Date
I-Heschong	Heschong, Lisa	Email	01/07/2022
I-Cerles	Cerles, Marty	Email	01/13/2022
I-Meyer	Meyer, Nick	Email	01/13/2022
I-Bird	Bird, Marsha	Letter	01/14/2022
I-Jenkins	Jenkins, Sharon and Columbus	Email	01/19/2022
I-Louie	Louie, Denise	Email	01/22/2022
I- Pierotti	Pierotti, Karen	Email	020/3/2022
I-Cerutti	Cerutti, Mary	Email	02/04/2022
I-Lowry	Lowry, Molley and Richard	Letter	02/05/2022
I-Gilmore	Gilmore, John	Email	02/06/2022
I-Kushner	Kushner, Pinky	Letter	02/07/2022
I-Travis	Travis, Cynthia	Email	02/09/2022
I-Sullivan/Loeffler	Sullivan, Michael and Loeffler, Paul	Email	02/12/2022
I-Welborn	Welborn, Tes	Letter	02/13/2022
I-Beaton	Beaton, Laura	Letter	02/14/2022
I-Jones	Jones, Sarah	Email	02/14/2022
I-Kessler	Kessler, Lisa, MS, MD	Email	02/14/2022
I-Maerki	Maerki, Susan	Letter	02/13/2022
I-Michaels/Eichenberg	Michaels, Jamie and Eichenberg, Tim	Letter	02/14/2022
I-Wuerfel	Wuerfel, Nancy	Email	02/14/2022
I-Wong	Wong, Mei Lie	Email	03/09/2022

SOURCE: ESA, 2022

8.2.1.4 List of Individuals Commenting Orally at the Public Hearing on the Draft EIR

Table 8.2-4, below, provides a list of all individuals who commented orally at the public hearing on the Draft EIR.

TABLE 8.2-4
INDIVIDUALS COMMENTING ON THE DRAFT EIR, PUBLIC HEARING

Commenter Code	Name of Individual Submitting Comments	Comment Format	Comment Date
PH-Welborn	Welborn, Tes	Transcript	01/19/2022
PH-Unidentified	Unidentified	Transcript	01/19/2022
PH-Huntington	Huntington, Dorrie	Transcript	01/19/2022
PH-Vasan	Vasan, Susheela	Transcript	01/19/2022
PH-Fuller	Fuller, Matt	Transcript	01/19/2022
PH-McGeever	McGeever, Sean	Transcript	01/19/2022
PH-Maerki	Maerki, Susan	Transcript	01/19/2022

SOURCE: ESA, 2022

8.2.1.5 Other Miscellaneous Correspondence

Other miscellaneous correspondence was received during the NHPH Draft EIR public review period, but which did not comment directly on the adequacy of the NHPH Draft EIR. This correspondence is included as **Appendix MC** in this Final EIR.

8.3 Master Responses

8.3.1 Introduction

This section presents "master responses" addressing a number of similar or recurring topics in the comments received on the Draft EIR. The intent of the master responses is to avoid repetition within this document and improve readability by giving a single, comprehensive response to these comments. Responses to the individual comments that raise these recurring topics refer the reader to the master responses in this chapter.

8.3.2 Summary of Master Responses

- **Master Response 1: Non-CEQA Comments**
- **Master Response 2: General Comments on EIR and Environmental Topics**
- **Master Response 3: Community Outreach**
- **Master Response 4: Bird Strikes**

8.3.3 Master Responses

8.3.3.1 Master Response 1: Non-CEQA Comments

Under CEQA, the lead agency "shall evaluate comments on environmental issues" received from people who have reviewed a draft EIR and prepare written responses that "describe the disposition of each significant environmental issue that is raised by commenters" (Pub. Res. Code Section 21091(d); CEQA Guidelines Section 15088(c)). CEQA does not require that substantive responses be provided for comments that do not address the adequacy or accuracy of the environmental analysis in the Draft EIR or that do not raise a significant environmental issue (Id.).

A number of comments were received on the Draft EIR that did not question the adequacy or accuracy of the environmental analysis or raise a significant environmental issue requiring a response. Examples include but are not limited to:

- ***Opinions on the Project, and other Miscellaneous Opinions:*** Comments were received that express support for, or opposition to, the proposed NHPH, and/or on the perceived merits or demerits of the NHPH. Other comments express opinions and observations, or editorialize on non-environmental issues that are beyond the purview of CEQA and the EIR. These comments do not address the adequacy or accuracy of the environmental analysis in the Draft EIR, or pertain to environmental effects of the proposed NHPH.

- ***Socioeconomic Comments:*** A number of comments were received related to socioeconomic issues. As discussed on page 4.0-5 in Section 4.0, Introduction to Environmental Analysis, in the Draft EIR, under CEQA, economic and social effects of a proposed project by themselves are not considered to be significant impacts, and are relevant only insofar as they may serve as a link in a chain of cause and effect that may connect the proposed project with a physical environmental effect, or they may be part of the factors considered in determining the significance of a physical environmental effect. In addition, economic and social factors may

be considered in the determination of feasibility of a mitigation measure or an alternative to the proposed project (see CEQA Guidelines Section 15064(e)). As such, the potential effect of the NHPH on economic and social issues, in and of themselves, such as tax revenues, the cost of public services, cost of housing or property values, are not part of this EIR.

- ***Quality of Life Comments:*** Comments were received that stated that increased growth at the Parnassus Heights campus site under the proposed NHPH would have an adverse effect on the quality of life of the local residents and on the character of the community. Potential effects of a proposed project on the quality of life and related conditions, in and of themselves, are not considered environmental impacts under CEQA. See *San Franciscans for Reasonable Growth v. City and County of San Francisco* (1989) 209 Cal.App.3d 1502. Similarly, changes in community character are not environmental effects under CEQA. See *Preserve Poway v. City of Poway*, 245 Cal. App. 4th 560, 575-82 (2016) (changes in community character are not effects under CEQA). CEQA does require that the environmental document evaluate and disclose significant impacts, among others, on transportation, air quality, noise, and public services at the project site and its vicinity. Those effects are fully analyzed and disclosed in the Draft EIR.

UCSF acknowledges the public's concerns about these types of issues. UCSF generally does not provide individual responses to these comments in this Comments and Responses chapter of the Final EIR. In some cases, UCSF has elected to provide individual responses to certain non-CEQA issues for informational purposes. In all cases, these non-CEQA comments are part of the record on the NHPH, and will be considered by the UC decision-makers as part of the project consideration process.

8.3.3.2 Master Response 2: General Comments on EIR and Environmental Topics

A number of general, unsubstantiated statements were received regarding overall concerns with the Draft EIR, including, but not limited to, potential impacts on various environmental topics, mitigation measures, and alternatives. Due to the lack of specificity in these comments, the responses to these comments are generally incorporated in the responses to specific comments raised on the same general topics.

UCSF acknowledges the receipt of these types of comments. While UCSF generally does not provide individual responses to these comments in this Comments and Responses chapter of the Final EIR, they are part of the record on the NHPH, and will be considered by the UC decision-makers as part of the project consideration process.

8.3.3.3 Master Response 3: Community Outreach

Certain comments, including **I-Welborn-8, I-Jones-5, I-Kessler-10, PH-Huntington-5 and PH-Vassan-9**, expressed opinions about the community outreach process that has been conducted for the NHPH, including regarding the adequacy of the process. While the community outreach comments here are not directly related to CEQA, the master response below is provided.

The University engaged in a public process that fully meets requirements prescribed by CEQA. Furthermore, in addition to the CEQA process, the University created several community

planning processes related to the Comprehensive Parnassus Heights Plan (CPHP) and New Hospital. As described further below, the University engaged in several robust public processes (first for the CPHP and then the New Hospital itself) in order to meaningfully engage the public, drill down on feedback/concerns and ultimately bring forth the best possible project.

Moving to Online Meetings

The CPHP community process began in 2018 with the establishment of the Parnassus Community Working Group, followed in 2019 by the Advisory Committee on the Future of Parnassus Heights. With these two community planning efforts, nearly two dozen public community meetings, including open houses, were held over the course of two years. All community meetings through February 2020 were held in-person at the Parnassus Heights campus site. In March 2020, San Francisco Mayor London Breed instituted a shelter-in-place public health order in response to the novel coronavirus, COVID-19. UCSF then surveyed Advisory Committee members to determine their interest in continuing the engagement process over an online format, and the majority of the members who responded were interested in doing so. Consequently, online meetings were held in April and May 2020. The final CPHP community meeting was in June 2020.

The NHPH community process began in October 2020 and continues at present. During much of 2021, restrictions on indoor gatherings and concerns over COVID-19 variants precluded in-person public meetings. While the situation continues to evolve and governmental mandates have been eliminated or loosened, the pandemic has not yet ended, and out of an abundance of caution and concern at this time about public gatherings at a major medical center, UCSF community meetings will continue in the online format for the time being.

In addition to concerns related to the pandemic, the online format of the community meetings allows UCSF to engage with a broader group of community individuals. The number of people attending the meetings has increased as a result of easier and more convenient accessibility. The ability to engage from one's own home, without having to deal with parking, walking, child or elder care, has allowed a broader range of community individuals to participate in the engagement process.

Public Input

Over the course of the multi-year planning process for the Parnassus Heights campus site, UCSF has in fact listened to the community. Since the start of the community process on the broader plan -- the CPHP – beginning in 2018 with the Parnassus Community Working Group, community input helped to shape the plan. Community input was memorialized in the Community Ideas Report, and included six focus areas of housing, campus design, connectivity with nature, multi-modal mobility, public realm and programs and amenities that benefit the neighborhood. These community ideas were incorporated into the CPHP.

Additionally, through the Advisory Committee for the Future of UCSF Parnassus Heights community process which was focused on ideating on community investments, participants identified 25 potential community investment ideas falling under three categories: open space,

transportation and mobility, and housing. The community investment ideas became the basis and starting point for what would ultimately become a package of substantial community benefits to be provided by UCSF, as well as commitments by the City of San Francisco to provide services that are beyond UCSF's control to provide, such as expanded public transit service. These commitments were memorialized in 2021 in the Memorandum of Understanding between UCSF and the City of San Francisco.

In some instances, during the above community processes, concerns were raised about project impacts relating to environmental topics that are covered under CEQA, such as aesthetics, shadows, wind, and increased population, and concomitant impacts on transportation, parking, and water supply. Those discussions about environmental impacts were not evaded or ignored as asserted by some commenters; they were appropriately deferred to the CEQA process, as the environmental impacts of the CPHP were to be analyzed under the CPHP EIR.

Specifically, with regard to the NHPH, UCSF listened to the community throughout the CPHP and NHPH community processes. Hearing concerns about the size of the NHPH, UCSF and its design team modified the NHPH design as follows:

- Reduced the size of the proposed building from the original 955,000 gross square feet (gsf) to the proposed 900,000 gsf discussed in the NHPH Draft EIR.
- Reduced the mass of the proposed building by incorporating substantial building setbacks and terraces at the upper levels.
- Modified the proposed building footprint so that the building would no longer encroach into the Reserve.
- Minimized rooftop mechanical equipment as much as possible on the reduced upper level, and incorporated screens.

Given the complex nature of the NHPH project and the tremendous demand for space in the NHPH, the above changes were difficult to make, but prioritized by UCSF nonetheless. Additionally, based on community feedback, UCSF incorporated amenities into the NHPH project for the broader community to enjoy, such as an all-day eatery and open terrace planned on the sixth level, which would be accessible to the general public and provide expansive views and a place of respite. The design includes substantial landscaping for visitors to enjoy and provides a visual green connection to the adjacent Mount Sutro Open Space Reserve.

8.3.3.4 Master Response 4: Bird Strikes

One commenter expressed concern about an increase in bird strikes from the larger structure and glass-covered design proposed for the NHPH (**O-SM-82**). This commenter considered the Draft EIR analysis of bird strike impacts to be inadequate because it did not quantify the magnitude of this potential impact, and recommends revisions to assess these impacts (**O-SM-84**). Comments **O-SM-81** and **O-SM-83** considered the New Hospital to pose a threat to bird movement along the Pacific Flyway that it would limit access to Mount Sutro Open Space Reserve (Reserve) and impedes bird movement between existing buildings. While taller buildings may be more likely to

cause collisions with migrating birds, this potential impact is highly localized within the context of the Pacific Flyway, which encompasses the whole western United States. There are few gaps between existing buildings on the mostly developed site such that bird movement would not be limited or restricted on the project site. In addition, the presence of extensive wooded habitat in the neighborhood surrounding the site and in the nearby open space reserve provide ample opportunities for bird movement.

Comment **O-SM-85** estimated that the New Hospital could result in over 1,400 additional bird deaths per year, assuming a certain amount of glass façade per foot of office space based on other buildings in San Francisco. Numerous factors affecting the likelihood of bird strikes are described, including the size, extent and reflectance of windows of the New Hospital (**O-SM-86**). This commenter further details numerous "window collision risk factors" (**O-SM-86** and **O-SM-87**) that may impact birds, and describes siting and designing methods to minimize impacts to birds.

Commenters noted that the building would feature expansive glass, glass railings and overhangs that may increase risk to birds, and urge that the building be designed using state-of-the-art approaches to minimize bird risk (**O-SM-94, O-GGAS-3, O-GGAS-7**). Commenters recommended that UCSF adhere to American Bird Conservancy guidelines (2015), as well as San Francisco's 2011 guidelines (**O-SM-96, O-GGAS-4**).

The NHPH Draft EIR Section 4.3, *Biological Resources*, Impact BIO-2 discusses the potential for bird window collisions, noting the location of San Francisco along the Pacific Flyway, and that approximately 100 million to 1 billion birds die in North America as a result of collisions each year. The NHPH Draft EIR acknowledges that construction of the New Hospital, which would be developed adjacent to the Reserve boundary, could increase the likelihood of birds striking windows of that building during flight. The building siting analysis considered the potential impact of new facilities on migratory birds, but the proposed building configuration was also influenced by the needs of the campus, the limitations of available space, and other factors. Attempting to quantify the potential future increase in bird strikes from the New Hospital on an annual basis would be speculative.

The NHPH Draft EIR considered and analyzed the potential that construction night lighting and building night lighting associated with operation of the new development could attract migratory birds and potentially increase bird strike injuries or mortality. Accordingly, the Draft EIR considered the impact of NHPH construction to result in bird strikes as significant, and identified NHPH Mitigation Measure BIO-2a to reduce construction-phase impacts to birds, by avoiding night construction in habitat areas and reducing lighting, and NHPH Mitigation Measure BIO-2b, to design buildings using less reflecting glass, reduce lighting, and site them to reduce reflectivity consistent with City of San Francisco *Standards for Bird-Safe Buildings* (City of San Francisco, 2011). Specifically, UCSF plans to use a design which minimizes the amount of exterior lighting along the outside of the building while meeting minimum code requirements for lighting at egress and the areas within the public right of way.

The NHPH Draft EIR included numerous provisions to reduce the likelihood of bird strikes. As stated in the NHPH Draft EIR (Section 4.3-20) "UCSF would coordinate with a qualified

ornithologist to incorporate design features into the New Hospital that would minimize the potential for bird strikes. Building architectural features and operational strategies under consideration include, but are not limited to, use of fritted and frosted glazing; use of building architectural features to minimize reflectively and visually interrupt glazed facades; minimize exterior lighting, and use of controls to reduce internal lighting emitted from patient rooms; implementation of a food waste management strategy to ensure appropriate handling of food waste in all proposed outdoor public areas to minimize the risk of attracting birds to the vicinity; and following LEED Pilot Credit #55, Bird Collision Deterrence guidance to further minimize potential adverse impacts to birds. Further, UCSF proposes to implement a three-year post-construction monitoring plan to monitor the effectiveness of the building and site design and practices in preventing bird collisions. UCSF would also comply with the allowed backlight, uplight, and glare (BUG) ratings for exterior lighting, which would serve to minimize the potential for bird strikes from exterior night lighting." These measures are derived from San Francisco's *Standards for Bird-Safe Buildings* (2011). UCSF also will consider incorporating methods from the American Bird Conservancy's 2015 guidelines as appropriate during the design process.

The design team's methods for reducing the bird strike risk of the New Hospital would include minimizing the amount of large format glazing wherever possible on the building and elevated pedestrian walkway. The design includes overhangs which help to break the visual line of sight to the upper glazing areas. The design plans to identify the necessary threat factor solution for the glass guardrail along the outdoor terrace at levels 6 and level 8. For the proposed elevated garden, the design includes distance between the glazed areas and the landscaped elements by a maintenance and access route from the building enclosure to the perimeter guardrail which provides more light for the vegetation and would also reduce the likelihood of birds striking the glass.

One commenter detailed potential approaches to post-construction fatality monitoring for birds in comments **O-SM-98** through **O-SM-101**. These comments suggested first collecting baseline mortality data, including behavioral studies, and, following construction, implementing a plan that includes regular search intervals, carcass detection, and potentially trained dogs. In addition, the commenter recommended nocturnal surveys (**O-SM-100**), compensatory mitigation for bird fatalities (**O-SM-97**), and peer review and data sharing (**O-SM-101**). As stated in the NHPH Draft EIR (4.3-20), UCSF plans to implement a three-year post-construction fatality monitoring program. This program would include regular surveys for detection of bird and bat carcasses and record data. Prior to commencement of monitoring, the program would identify threshold levels of fatality and adaptive management actions to take, such as reduction in lighting, if thresholds are exceeded. Nocturnal monitoring and data sharing will be considered as part of the program; however, compensatory mitigation is not required under the City of San Francisco Bird-Safe Guidance (2011), and is not recommended or required by federal or state resource agencies, particularly for an urban site.

This monitoring program with adaptive management, in combination with the enforceable performance standards in NHPH Mitigation Measure BIO-2b, which would implement specific design approaches to minimize risk to birds from glass in the New Hospital, would reduce the risk to migrating birds from striking the New Hospital to a less than significant level.

8.4 Written and Oral Comments on the Draft EIR, and Responses to Comments

8.4.1 Introduction

This section contains copies of the written comment letters (including emails) received from agencies, organizations and individuals, and copies of the public hearing transcript during the public review period on the Draft Environmental Impact Report (December 16, 2021 through February 14, 2022). Each letter received during this comment period is reproduced here in its entirety, with the exception of certain exhibits and/or attachments to three comment letters (Comment Letters O-TL1, O-TL2, and O-SM; in those instances, the subject exhibits and attachments are included in their entirety in Appendix O-TL1, Appendix O-TL2, and Appendix O-SM, respectively, in this Comments and Responses document).

8.4.2 Comments and Responses

Each written comment letter is designated with commenter code in upper right-hand corner of the letter. As discussed in Section 8.2 in this Comments and Responses document, the commenter code begins with a prefix indicating whether the commenter represents a public agency (A), an organization (O), an individual (I), or a speaker at the public hearing (PH). This is followed by a hyphen and the acronym of the agency or organization, or the individual's last name.

Within each written comment letter, individual comments are labeled with a number in the margin. Immediately following each comment letter is a corresponding individual response to each numbered comment.

Within the public hearing transcript, individual speaker comments are labeled with the name of the speaker followed by the numbered comment of the speaker in the margin. Immediately following the public hearing transcript are the corresponding individual responses to all of the numbered comments.

Where responses have resulted in changes to the Draft EIR, the reader is referred to changes that appear in Section 8.5 of this Comments and Responses document. Where the individual response refers to the reader to one or more master responses, the reader is referred to the applicable master response(s) in Section 8.3 of this Comments and Responses document.

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8.4.2.1 Draft EIR Comment Letters – Agencies

San Francisco Planning

49 South Van Ness Avenue, Suite 1400
San Francisco, CA 94103
628.652.7600
www.sfplanning.org

February 14, 2022

Diane Wong
Principal Planner, Physical Planning
UCSF Real Estate – Campus Planning
via email to: Diane.Wong@ucsf.edu and EIR@ucsf.edu

Re: City and County of San Francisco Comment Letter on the University of California San Francisco New Hospital at Parnassus Heights Draft Environmental Impact Report

Dear Diane Wong,

The City and County of San Francisco ("City") appreciates the University of California, San Francisco ("UCSF") and the Regents of the University of California ("Regents") for their ongoing contributions to San Francisco. The City also appreciates UCSF for engaging the City and San Francisco community in the planning process for the Comprehensive Parnassus Heights Plan ("CPHP" or "the Plan") which led to a Memorandum of Understanding ("MOU") between the City and the Regents. As an MOU signee and responsible agency under the California Environmental Quality Act ("CEQA"), the City continues to be interested in working with UCSF and the Regents to continue refining the Plan, including mitigating environmental impacts from implementation of the Plan and addressing concerns of the City and its residents.

The City recognizes the need to upgrade, expand, and modernize older medical facilities, an objective of the Plan. Thus, we recognize the importance of the New Hospital at Parnassus Heights project ("project") and hope to shape the important details of how the project interfaces with the surrounding context. The City is appreciative of the opportunity that UCSF has provided to the City, per the terms of the MOU, to review and comment on the schematic design of the project over the past year.

It is in that spirit that the City submits these comments on the project's Draft Environmental Impact Report ("draft EIR"). These comments reflect combined comments from the San Francisco Planning Department, and San Francisco Municipal Transportation Agency ("SFMTA").

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The following comments are primarily related to issue areas impacting City land and items over which the City retains jurisdiction: a pedestrian bridge and tunnel across Parnassus Avenue, air quality impacts, and transportation impacts. We are optimistic that UCSF can address these comments through its EIR process, ongoing collaboration during and after the current design phase, and ongoing implementation of the MOU and the Plan. We look forward to continued collaboration for decades to come. 1 cont.

Bridge and Tunnel across Parnassus Avenue

The City has approval authority of the bridge and tunnel within City right-of-way, as stated in the draft EIR (e.g., p. 1-6). The draft EIR provides limited details regarding the bridge and tunnel (e.g., p. 3-43 and 3-44). The City will require further details and coordination with UCSF in the years to come to understand both proposed elements' impacts and alignment with City policy before the City can use its decision-making authority for these proposed elements. 2

The draft EIR should clarify if it fully or accurately considered the bridge's environmental impacts, given the bridge is dependent on the construction of the planned Irving Street Arrival structure, which is not part of the project description and not yet designed. Examples of analysis requiring clarity are wind, air quality, and consistency with plans: 3

- *Wind*: the draft EIR should identify the impacts with and without the bridge. The draft EIR only assesses the bridge impacts under the Cumulative 2050 scenario combined with other changes (p. 4.1-21). The City can make a more informed future decision on the bridge with this information, especially given the proximity of the bridge to wind hazard locations.

  UCSF shall also list in the mitigation measure as an example of design changes and wind reduction strategies to include changes to location, design, or elimination of the bridge. UCSF shall list the City for consultation in the mitigation measure as the hazard impacts affect the public right-of-way. 4

- *Air quality*: please clarify if the draft EIR estimated the impacts of the Parnassus Avenue bridge and tunnel. If yes, please clarify assumptions for those estimates. Draft EIR p. 4.2-26 implies the modeling assumed compliance with the City's Clean Construction ordinance (Environment Code, Chapter 25). The project does not appear to meet the definition of a "Public Work" per that code section. Any modeling assumptions based on compliance with that code section may be incorrect. Thus, the project may have more severe impacts and require strengthened mitigation such as addressing emissions from on-road heavy-duty vehicles. The mitigation must also identify the monitoring and reporting requirements for compliance with the Plan, such as those requirements in the Clean Construction ordinance. 5 6 7

- *Aesthetics and General Plan*: Contrary to the generalized statement in the draft EIR about UC having sole jurisdiction over programs and projects proposed on the Parnassus Heights campus site (AES-2, p. 4.1-31), the pedestrian bridge across Parnassus Avenue *is* under City jurisdiction. The EIR must primarily consider the aesthetics impacts of the bridge against the policies of the General Plan of the City, not against UCSF's Plan. There is little available detail on the design of the proposed bridge, and little to no analysis of the bridge in relation to the General Plan. 8

- *Consistency with Plans (Better Streets Plan, General Plan)*: additionally, the analysis and conclusion drawn in draft EIR pages 4.10-18, 4.10-22, and 4.10-36 is insufficient regarding the proposed bridge in reference to the policies of the Better Streets Plan (BSP) and General Plan. These policy documents explicitly discourage the use of pedestrian bridges (e.g., BSP Policy 7.2) in favor of safe and pleasant street crossings and discuss the limited and extraordinary circumstances necessary to justify a pedestrian bridge; the General Plan Urban Design Element also stresses the importance of maintaining public view corridors unobstructed along streets. The discussion on page 4.10-18 describes how the proposed tunnel is justified by the need to carry patients and hospital materials *between medical facilities* on either side of Parnassus Avenue. However, there is little to no explanation as to who would be served by the pedestrian bridge and why it is justified or consistent with these policies. General statements about congestion are insufficient. It appears that the bridge is primarily intended as a convenience for visitors arriving in the parking structure and the new "Irving Street Arrival", a structure that is neither designed yet nor part of the project description. 9

Air Quality

Please clarify how the draft EIR considered the combined air quality (and potentially other) effects of the project and the Plan. The project is the largest component of the Plan. The Plan EIR identified significant air quality impacts on some topics that the project draft EIR does not identify. Given this, the project draft EIR does not apply mitigation measures applicable to the Plan (e.g., measures related to reducing vehicle trips under Plan impact AIR-2 such as transit pass program) that should also be applicable to the project. For example, the Plan EIR states: 10

> "The results presented in Table 4.2-9 reflect the incremental emissions that would occur at the buildout of the proposed CPHP (inclusive of the New Hospital), and the significant impact related to PM_{10} emissions is identified based on net new emissions in 2050. As noted earlier, due to a lack of adequate details about the operational characteristics of the New Hospital, it is not possible to estimate the operational emissions from the New Hospital at this time. The New Hospital, however, represents a large percentage of the proposed CPHP development. In fact, based on building space, the Initial Phase development program (including the New Hospital), which would be completed by 2030, makes up about 74 percent of the total new development under the CPHP. Given the size of the Initial Phase development program, it is anticipated that with the completion of the New Hospital in 2030, VMT [vehicle miles traveled]

associated with the campus site would increase substantially such that a significant impact related to PM_{10} emissions would likely begin in 2030 or shortly after." (p. 4.2-34, impact AIR-2)

"As this significant impact would likely begin upon the completion of the New Hospital, the annual monitoring and reporting program shall be commenced upon the completion and occupancy of the Initial Phase projects, i.e., after 2030…" (p. 4.2-37, impact AIR-2, mitigation measure AIR-2b)

10 cont.

The City understands UCSF has updated information for the new hospital, and that the project-level EIR does not tier from the Plan EIR (project draft EIR p. 1-4). But UCSF is understating the cumulative impact of the project with the context of the Plan. Thus, UCSF should reassess its cumulative air quality impact analysis, including applicability of standard approaches for it, based on the above plan EIR analysis and/or explain how Plan EIR mitigation is incorporated into the project.[1]

Transportation

The City appreciates the commitment UCSF has made in the MOU to address transportation impacts, such as loading and transit. The City appreciates the supplemental loading analysis, but we continue to disagree with UCSF's misunderstanding of applicable significance criteria for physical transportation impacts under CEQA (see City's draft EIR letter on the Plan). The following relate to details regarding design details of the project and its context within the Plan:

- *Vehicular Circulation and Loading*: the City prefers the vehicular circulation option 2 (figure 3-14b), assuming valet operations would occur on-street under vehicular circulation option 1. On-street valet operations on Parnassus could create conflicts and could lead to substantial delay that would be unacceptable to the SFMTA. Please also provide plans and turn templates for access to and from the loading dock, including from Parnassus Avenue. Please also include as part of the project appendix TRANS recommendations for loading dock operations and additional passenger loading operations measures to meet any unmanaged, unmet demand.

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- *Parnassus Avenue Streetscape*: the MOU (Section III.F.5) restates UCSF's commitment to working with the City to update, within two years of the New Hospital EIR, and implement a Parnassus Avenue Streetscape Plan. The design and function of the New Hospital's streetscape and vehicular circulation along Parnassus Avenue implicates the broader Parnassus Avenue streetscape and functions, including the vehicular circulation options (figures 3-14). The City calls on UCSF to advance the Parnassus Avenue Streetscape Plan effort with the City in order to inform and coordinate the final design of the sidewalks, street trees, landscaping, and curb functions along the street, inclusive of the New Hospital frontage.

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[1] For example, the project draft EIR includes stormwater and wastewater standards into the Plan and project that the Plan EIR included as mitigation measure HYD-1.

Conclusion

The City continues to support collaboration with UCSF on addressing the needs of the City and UCSF. We are optimistic that UCSF can address these comments through its EIR process, ongoing collaboration, and implementation of the MOU. Please contact Wade.Wietgrefe@sfgov.org to follow up on CEQA aspects, and please contact Joshua.Switzky@sfgov.org to follow up on MOU/design aspects. 13

Sincerely,

Rich Hillis
Director of Planning

Responses to Comments from San Francisco Planning Department

A-SFP-1 The City expresses appreciation for UCSF's on-going contributions to San Francisco, and for engaging the City and the San Francisco community in the planning process for the CPHP, which has led to the Memorandum of Understanding (MOU) between the City and the Regents. The City indicates its interest in working with UCSF and the Regents to continue refining the CPHP, including mitigating impacts from its implementation and addressing concerns of the City and its residents. These comments are acknowledged; no response is required.

The City indicates its recognition of the need to upgrade, expand, and modernize older medical facilities, an objective of the CPHP; and to shape the important details of how the project interfaces with the surrounding context. The City expresses appreciation of the opportunity provided by UCSF to review and comment on the schematic design of the project over the past year. These comments are acknowledged; no response is required.

The City indicates its comments are primarily related to issue areas impacting City land and items over which the City retains jurisdiction. For those comments related to the pedestrian bridge and tunnel across Parnassus Avenue, please see response to Comments A-SFP-2 through A-SFP-9, below. For those comments related to the air quality impacts, please see responses to Comments A-SFP-5, A-SFP-6, and A-SFP-10. For those comments related to the transportation impacts, please see response to Comments A-SFP-11 and A-SFP-12.

Lastly, the City indicates its optimism that its comments can be addressed through the EIR process, ongoing collaboration during and after the current design phase, and ongoing implementation of the MOU[1] and the CPHP; and states that it looks forward to continued collaboration with UCSF. These comments are acknowledged; no response is required.

A-SFP-2 The City indicates that the City has approval authority of the proposed pedestrian bridge and tunnel, as acknowledged in the NHPH Draft EIR, page 1-6. The City indicates the NHPH Draft EIR has limited details regarding the bridge and tunnel, and that the City will require further details and coordination in the future to understand both proposed elements' impacts and alignment with City policy before the City can use its decision-making authority for these elements.

The NHPH Draft EIR presents available information on the proposed pedestrian bridge and tunnel, including its approximate proposed location along Parnassus Avenue, bridge and tunnel height and width, and elevation above and below

[1] *Memorandum of Understanding, University of California, San Francisco – Comprehensive Parnassus Heights Plan*, January 22, 2021, https://sfplanning.org/project/ucsf-parnassus-campus-plan-memorandum-understanding#:~:text=The%20University%20of%20California%20San,and%20largest%20of%20UCSF's%20campuses.

grade, respectively; and the functional purpose of both facilities. While it is expected that further design details on the proposed pedestrian bridge and tunnel will become known as the design process proceeds for these project elements, the pedestrian bridge and tunnel are nonetheless described at a sufficient level of detail in the NHPH Draft EIR to allow evaluation of their potential environmental impacts during both construction and operation. Please see NHPH Draft EIR Section 4.1, *Aesthetics, Wind and Shadow*, and Section 4.2 *Air Quality*; and response to Comments A-SFP-3 through A-SFP-9, below.

A-SFP-3 The City indicates that the NHPH Draft EIR should clarify if it fully considered the bridge's environmental impacts, given the bridge is dependent on the construction of the planned Irving Street Arrival. The proposed pedestrian bridge was part of the overall CPHP program that was programmatically addressed in the CPHP EIR. Further, the proposed pedestrian bridge is analyzed in the NHPH Draft EIR Project Description as part of the overall NHPH project, and a related improvement of the proposed New Hospital. While the pedestrian bridge would ultimately connect to, and from a pedestrian circulation perspective would operate in conjunction with, the Irving Street Arrival, they are considered separate projects and subject to separate approvals. The proposed pedestrian bridge is not anticipated to be constructed concurrently with the New Hospital.

The City states that the NHPH Draft EIR should identify the wind impacts with and without the pedestrian bridge, and questions why the NHPH Draft EIR only assessed the pedestrian bridge impacts under the Cumulative 2050 scenario combined with other changes. As explained in the NHPH Draft EIR Project Description, page 3-47, Table 3-3; and under the approach to wind analysis in Section 4.1, *Aesthetics, Wind and Shadow*, page 4.1-21, the specific timing for construction of the proposed pedestrian bridge is not yet determined, however, it would occur at some point after 2030. Accordingly, the proposed Parnassus Avenue pedestrian bridge is appropriately evaluated in the wind model under the Cumulative 2050 scenario.

Further, UCSF's wind consultant expects that the inclusion of the pedestrian bridge in the Cumulative 2050 configuration would have little, if any influence on the wind conditions predicted along Parnassus Avenue, including the identified hazard locations to the east. The proposed pedestrian bridge itself would represent a relatively small vertical cross section relative to prevailing winds flowing west to east along Parnassus Avenue, and therefore, would not be expected to intercept and accelerate winds towards grade to an adverse extent. The proposed pedestrian bridge is also located at an appreciable height above Parnassus Avenue that is not expected to channel winds between the bridge and road below. This is evident through CPP's wind tunnel testing where the measurement point below the bridge (Location 24) was not observed to show an increase in wind speeds with the addition of the bridge.

A-SFP-4 The City indicates UCSF should list changes to location, design, or elimination of the bridge as examples of design changes and wind reduction strategies in the mitigation measure. As explained in response to Comment A-SFP-3, above, the proposed pedestrian bridge would not be expected to adversely affect wind conditions on Parnassus Avenue, and consequently, would not warrant wind mitigation.

It should be noted that UCSF has conducted substantial planning since the development of the original CPHP concept design to minimize wind effects of the proposed New Hospital. The efforts to minimize wind have included making the building smaller and reducing the building mass, pulling the east side of New Hospital out of the Reserve, articulating the façade, and making modifications to the building at the ground level.

The City further indicates that UCSF should list the City for consultation in the mitigation measure as the hazard impacts affect the public right-of-way. This comment is acknowledged. As lead agency, UCSF is constitutionally exempt from local land use control and processes whenever using property under its control in furtherance of its educational mission. Therefore, it is not necessary for UCSF to include City consultation within the mitigation measure itself. However, outside of CEQA, UCSF is more than willing to consult with the City regarding planned measures to reduce wind impacts.

A-SFP-5 The comment requests confirmation that the analysis of air quality impacts included emissions from the proposed Parnassus Avenue bridge and tunnel.

The quantification of construction-related emissions for the bridge and tunnel connections, along with those of the Moffitt and Long Hospital renovations, were included in the CalEEMod run and assumed to occur from January 2030 to January 2033, during the last phase of construction, after completion of the New Hospital based on timing provided by UCSF's construction team. These emissions are presented in Table 4.2-7 on page 4.2-27 of the NHPH Draft EIR. The CalEEMod output file for the construction analysis is provided in Appendix AIR of the NHPH Draft EIR. The analysis assumed 315 haul truck trips for soil removal, as estimated by UCSF's construction team as well as 141 vendor trips for concrete delivery.

A-SFP-6 The comment raises concern that the estimation of construction-related air pollutant emissions may have considered elements of compliance with the City of San Francisco's Clean Construction Ordinance, which may not be applicable to the proposed NHPH.

The statement on page 4.2-27 of the NHPH Draft EIR referencing the City's Clean Construction Ordinance was specific to improvements that would be constructed outside the campus site boundary, such as the proposed Parnassus Avenue bridge and tunnel, and simply stated that it "*may* involve the cooperation

of the City of San Francisco and, as public works projects, would be subject to the City of San Francisco's Clean Construction Ordinance" (emphasis added). However, the estimation of emissions presented in Table 4.2-7 on page 4.2-27 of the NHPH Draft EIR did not consider any of the requirements of the City's Clean Construction Ordinance. The Ordinance would require the use of biodiesel in construction equipment and that construction equipment have either U.S. EPA-certified Tier 2 engines or CARB verified diesel emission controls. It should be noted that implementation of NHPH Mitigation Measure AIR-3: Clean Construction Equipment for NHPH Construction would require U.S. EPA-certified Tier 4 engines and is, therefore, more stringent than the Clean Construction ordinance.

In response to this comment, this text on the first paragraph, last sentence of page 4.2-27 of the Draft EIR is revised to remove reference to the Clean Construction Ordinance; please refer to Section 8.5 of this Comments and Responses document for the proposed revision.

A-SFP-7 This comment suggests that the construction emission impact may be more severe than calculated due to on-road heavy duty vehicles and that the "mitigation" should identify monitoring and reporting requirements.

As discussed in response to Comment A-SFP-5, above, the estimation of construction emissions for the proposed Parnassus Avenue bridge and tunnel connections assumed 315 haul truck trips for soil removal, as estimated by the UCSF's construction team as well as 141 vendor trips for concrete delivery. As discussed in response to Comment A-SFP-6, the estimation of construction emissions for the bridge and tunnel connections did not consider compliance with any measures required by the Clean Construction Ordinance, and were unmitigated estimates. As stated on page 4.2-27 of the NHPH Draft EIR, daily construction emissions of ROG, NOx, and $PM_{2.5}$ would be less than the 54 pound per day threshold, and emissions of PM_{10} would be less than the 82 pound per day threshold, in all years of construction. Therefore, the project would have a less than significant impact with respect to construction-related emissions of criteria air pollutants, and no mitigation measures are required. On page 4.2-38 of the NHPH Draft EIR, the analysis acknowledges that for construction-related fugitive dust impacts of projects to be less than significant, a suite of recommended dust-control measures should be implemented. Therefore, NHPH Mitigation Measure AIR-1 is identified to reduce construction-related fugitive dust impacts to less than significant levels. The required Mitigation Monitoring and Reporting Program is provided in Chapter 9 of this Final EIR and identifies implementation procedures, responsible parties and reporting mechanisms for NHPH Mitigation Measure AIR-1.

A-SFP-8 The City indicates that the proposed pedestrian bridge is under City jurisdiction. This statement is consistent with the NHPH Draft EIR's treatment of the

proposed pedestrian bridge. Chapter 1, *Introduction*, page 1-7, notes the various City approvals required for the pedestrian bridge. Further, each technical section in Chapter 4 considers the off-site impacts of the proposed pedestrian bridge, and acknowledges applicable City plans, policies and regulations that would apply to its construction and operation.

The City states that there is little detail of the design of the proposed pedestrian bridge; please see response to Comment A-SFP-2, above. The City also indicates that the NHPH EIR should primarily consider the aesthetic impacts of the bridge against the policies of the City's General Plan.

First, with respect to aesthetics, as discussed in Section 4.02, *Scope of Analysis*, the NHPH meets the criteria of CEQA Statute Section 21099(d) which states that aesthetic impacts of an employment center project on an infill site located within a transit priority area shall not be considered significant impacts on the environment. Nevertheless, the NHPH Draft EIR provides an assessment of potential aesthetic impacts since the public and decision-makers may be interested in information pertaining to the aesthetic effects of the proposed NHPH, and may desire that such information be provided as part of the environmental review process.

The commenter does not cite any specific General Plan policy that the proposed Parnassus Avenue pedestrian bridge should be considered against. However, NHPH Draft EIR Section 4.1, Aesthetics, Wind and Shadow, pages 4.1-16 to 4.1-17 presents a number of policies from the General Plan Urban Design and Recreation and Open Space Elements that are particularly relevant to the NHPH. It should also be noted that the General Plan does not designate the segment of Parnassus Avenue where the pedestrian bridge is proposed as a street that either defines city form, provides a street view of an important building, extends the effect of public open space, or provides an important street view for orientation. Furthermore, the General Plan characterizes the segment of Parnassus Avenue where the pedestrian bridge is proposed as having only an average quality street view (as opposed to good or excellent). NHPH Draft EIR Section 4.1, pages 4.1-42 to 4.1-43 provides an informational discussion of consistency of the NHPH with the General Plan, and concludes that none of the NHPH's related improvements (including the proposed pedestrian bridge) would involve changes to the built environment that would clearly conflict with the City General Plan policies.

A-SFP-9 The City asserts that the analysis of the proposed Parnassus Avenue pedestrian bridge in NHPH Draft EIR Section 4.10, *Land Use and Planning*, is insufficient with respect to consistency with the Betters Streets Plan and General Plan. The City references Better Streets Plan Policy 7.2 as discouraging the use of pedestrian bridges in favor of safe and pleasant street crossings. Section 4.10 in the NHPH Draft EIR also acknowledges Policy 7.2 on page 4.10-18. The City indicates that there is little to no discussion as to who would be served by the

pedestrian bridge and why is its justified. Currently, approximately 20,000 daily pedestrian crossings occur on the eastern side of the campus site encompassing the crossings at the Millberry Union, the Medical Center, and Hillway Avenue. The NHPH is expected to add new pedestrian crossings of Parnassus Avenue. The purpose of the pedestrian bridge is to provide UCSF employees (faculty/staff/students), patients, and visitors to campus with another safe option to cross Parnassus Avenue. It would be open for any population to use, but it is expected that most of the use would occur by populations associated with the NHPH and the Medical Building 1. The proposed pedestrian bridge is not seen as a substitute for efforts to improve the pedestrian crossing experience included in the Parnassus Avenue Streetscape Plan; specifically, wider crosswalks that are better aligned with pedestrian desire lines. UCSF remains committed to the Parnassus Avenue Streetscape Plan. Implementation of the plan would continue through development and occupation of the NHPH, and the improvements is estimated to be complete in 2032. However, as discussed in NHPH Draft EIR Chapter 3, *Project Description*, the proposed weather protected pedestrian bridge would facilitate pedestrian safety, ease of crossing, and patient transport over Parnassus Avenue. The pedestrian bridge would also, as the City notes, enable easy travel for pedestrians between the parking garage on Irving Street and the Hospital via the planned Irving Street Arrival.

As discussed in Section 4.10 on page 4.10-18 to 4.10-19, the Better Streets Plan's overarching goal related to convenient connections is to design streets to "facilitate safe, accessible, and convenient connections among major destinations such as transit centers and land use and activity centers." Therefore, while tunnel and pedestrian bridge crossings in general are not the favored types of crossings, they are needed in this instance to facilitate and support safe UCSF operations, and further, would reduce congestion and potential vehicle conflicts with pedestrians along Parnassus Avenue. Given this unique circumstance and that UCSF plans on improving pedestrian access across Parnassus Avenue, the proposed pedestrian bridge and tunnel would not substantially conflict with this policy.

With respect to consistency of the proposed pedestrian bridge with the General Plan, the City indicates that the General Plan stresses the importance of maintaining public views corridors unobstructed along streets. However, as explained in response to Comment A-SFP-8, above, the location of the proposed pedestrian bridge on Parnassus Avenue is determined by the City General Plan to not be a street area important to urban design and views, and the quality of street views at this location is considered by the City to be average. It should also be noted, as shown in the visual simulation of the proposed pedestrian bridge in Figure 4.1-13 in the NHPH Draft EIR, the proposed pedestrian bridge would include glass panels that would serve to limit corridor view obstruction from locations along Parnassus Avenue. Given these factors, overall, the proposed pedestrian bridge would not substantially conflict with the General Plan.

A-SFP-10 This comment raises concerns that, because the CPHP EIR identified a significant unavoidable cumulative impact with respect to operational criteria air pollutants, the proposed NHPH in combination with other development under the CPHP should result in a significant cumulative impact in consideration of that the NHPH represents a large percentage of the CPHP development.

The analysis of operational criteria air pollutant impacts of the NHPH is a project-level analysis for the NHPH alone, and does not include the other developments planned under the CPHP. As discussed on page 4.2-25 of the NHPH Draft EIR, the contribution of a project's individual air emissions to regional air quality impacts is by its nature, a cumulative effect. Pursuant to BAAQMD's *Revised Draft Options and Justification Report, California Environmental Quality Act Thresholds of Significance,* while emissions from past, present and future projects in the vicinity also have or will contribute to adverse regional air quality impacts on a cumulative basis, no single project by itself would be sufficient in size to result in nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulative air quality conditions. As described in the NHPH Draft EIR, the project-level thresholds for criteria air pollutants are based on levels at which new project-related sources are not anticipated to contribute to an air quality violation, cause a significant human health risk, or result in a considerable net increase in criteria air pollutant emissions. Therefore, if a project's emissions are below the project-level thresholds, the project would not be considered to result in a considerable contribution to cumulative regional air quality impacts. Consequently, while full development under the CPHP was identified to have a significant unavoidable cumulative impact with respect to operational criteria air pollutants resulting from emissions of particulate matter (PM_{10}), because the emissions calculated for the NHPH would be below the project-level thresholds for criteria air pollutants, the NHPH would not be considered to result in a considerable contribution to cumulative regional air quality impacts, and no mitigation measure is warranted for either project-level or cumulative operational criteria air pollutant emissions, including PM_{10}, under the NHPH.

Notwithstanding this finding of the NHPH Draft EIR, CPHP Mitigation Measure AIR-2b: TDM Program Enhancements would still be implemented pursuant to the MMRP which requires implementation of the annual monitoring and reporting program upon the completion and occupancy of the Initial Phase projects, i.e., after 2030. As a practical matter, this TDM program is largely already being implemented with six of the eight identified measures already in place. For example, in addition to the existing shuttle service that serves the 16th Street Bart Station from Mission Bay, in fall 2021, a new shuttle stop serving the Civic Center area and BART station began operating. The past year was a highly unusual commute year due to the pandemic (an estimated 38 percent of UCSF employees and students were able to work remotely or in hybrid mode during the second year of the pandemic in 2021), and UCSF continues to promote telework

and see a growth in telemedicine. Half of UCSF's vanpools closed during the pandemic, as more employees worked completely off-site or at a reduced on-site schedule, and sharing of vehicles was discouraged during the pandemic. To meet UCSF's commuter needs post-pandemic, UCSF Transportation Services is offering a new vanpool program starting in spring 2022. The program gives participants more control over their commute, greater flexibility, lower fees, and provides a $250 subsidy to qualifying vanpools. To meet the needs of many hybrid workers who do not come to campus daily, in 2021, UCSF introduced a new daily parking rate to employees and students. With this change, fewer employees and students purchase monthly parking permits, and they make a conscious decision to drive, park, and pay only when necessary.

Other TDM programs are under consideration and evaluation, including the transit pass program that was also identified under CPHP Final EIR Mitigation Measure AIR-2b. UCSF Transportation Services regularly monitors TDM program usage and adjusts services based on demand and feedback.[2]

A-SFP-11 The commenter includes several statements and requests from the City:

- a statement that UCSF misunderstands applicable transportation significance criteria under CEQA;
- a statement of their preference for one of two vehicle circulation options presented and analyzed in the NHPH Draft EIR;
- a request that UCSF provide turning templates of the types of trucks that will use the new NHPH loading dock accessed from Parnassus Avenue onto Medical Center Way; and
- a request that UCSF include recommendations for measures to meet any unmanaged, unmet loading demand.

CEQA provides for lead agencies to adopt their own thresholds of significance and to evaluate the significance of a project's impact based on substantial evidence. The Regents of the University of California (UC or University) is unique among public agencies because it is a constitutionally created entity of the State of California with "full powers of organization and government" (Cal. Const. Art. IX, Section 9), and typically acts as both the project proponent and lead agency under CEQA. Under UC's significance thresholds, the NHPH would have a significant effect on the environment if the NHPH would:

- Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities
- Conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)

[2] Email from Tammy Chan, Senior Planner, Campus Planning, UCSF Real Estate to ESA, April 17, 2022.

- Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)
- Result in inadequate emergency access
- Adversely affect travel conditions along sidewalks and roadways serving the project site due to construction activities

With respect to the City's assertion that UCSF misunderstands applicable significance criteria for physical transportation impacts under CEQA, presumably the City is suggesting that UCSF needs to employ the City's standards of significance for transportation impacts, which differ from the CEQA Guidelines Appendix G standards described above, which UCSF uses. However, as described above, UCSF is constitutionally exempt from local land use regulation whenever using property under its control in furtherance of its educational mission. As such, UCSF, as the CEQA lead agency, is within its rights to both adopt and use the above criteria to make determinations of impacts related to transportation. This transportation impact determination discussion, including supporting analysis, is presented in the NHPH Draft EIR on pages 4.13-44 to 57.

The City's preference for vehicular circulation option 2 (Figure 3.14b) as shown on page 3-28 of the NHPH Draft EIR is noted. Turning templates of the range of vehicles that will access the Central Receiving Area, Long Dock, and the new NHPH Loading Dock, which were used as part of the NHPH design process, are included **Appendix TRANS-A**. These templates show the typical vehicle sweep path of SU-30 and SU-40 (box trucks), 34-foot dumpster trucks, and WB-40 and WB-50 (articulated tractor trailers) that would access loading docks from Medical Center Way. Table 2 in Appendix TRANS-A summarizes the existing and forecast average daily and peak hour deliveries compared to the loading supply at the Central Receiving Area, Long Dock, and NHPH Loading Dock areas under project conditions.

A discussion of passenger loading demand and supply under project conditions is included on page 4.13-37 to 41 of the NHPH Draft EIR. This includes comparisons of peak hour loading demand projections for the three new passenger loading areas (proposed as part of the NHPH) accessible off Parnassus Avenue – the "Main Loop," "ED Loop," and "Valet Area" to the supply of loading areas. This analysis, along with an assessment of the loading area design, is further described and supported on pages 4.13-49 to 51 of the NHPH Draft EIR. Each of these passenger loading areas were shown to meet the highest levels of anticipated demand and their future operation and design were determined not to be impacts under CEQA. Thus, the project would not create unmanaged, unmet passenger loading demand and a new operations measure is not required. As part of the operation of the NHPH, UCSF Health is committed to providing a positive experience for patients and visitors. This commitment extends to the patient and visitor arrival and departure experience, where they will determine the right levels of staffing to manage vehicle operations within the loops to meet this goal.

A-SFP-12 The commenter makes a request for UCSF to coordinate with the City and advance the Parnassus Avenue Streetscape Plan. UCSF affirms its commitment to continue to advance the plan (generally from the west side of the campus to the east side over the next approximately 10 years). Streetscape elements as called for in the plan were included as part of the renovation of the Clinical Sciences Building, which was completed in 2021. The next major phase (of three phases identified in the plan) of work is expected to be completed as part of the RAB several years from now. Implementation of the streetscape elements included in the plan will continue through development and occupation of the NHPH, and is estimated to be complete in 2032.

A-SFP-13 The City concludes its letter by indicating it continues to support collaboration with UCSF on addressing the needs of the City and UCSF, and that it is optimistic that UCSF can address these comments through its EIR process, ongoing collaboration, and implementation of the MOU. These comments are acknowledged; no response is required.

8.4.2.2 Draft EIR Comment Letters – Organizations

Law Offices of
Thomas N. Lippe, APC

201 Mission Street
12th Floor
San Francisco, CA 94105

Telephone: 415-777-5604
Facsimile: 415-777-5606
Email: lippelaw@sonic.net

February 14, 2022

By Email: *EIR@ucsf.edu*
Ms Diane Wong
UCSF Real Estate - Campus Planning
654 Minnesota Street
San Francisco, CA 94143-0286

Re: New Hospital at Parnassus Heights Draft Environmental Impact Report: Comments on Water Quality, Population and Housing, Historic Resources, and Air Quality.

Dear Ms Wong:

This office represents San Franciscans for Balanced and Livable Communities (San Franciscans), a citizen's group composed of San Francisco residents. I write on its behalf to comment on the Draft Environmental Impact Report (DEIR) for the New Hospital at Parnassus Heights (NHPH) with respect to its analysis of project impacts on population and housing; water quality; historic resources; and air quality.

San Franciscans objects to the approval of this Project. The DEIR fails to comply with the California Environmental Quality Act (CEQA) for the reasons described below. 1 2

San Franciscans previously submitted comments on the Comprehensive Parnassus Heights Plan Environmental Impact Report ("CPHP EIR") and is currently prosecuting litigation challenging the legality of the CPHP EIR entitled *San Franciscans for Balanced & Livable Communities v The Regents of the Univ. of CA, et al.;* Alameda Superior Court Case No. RG21089332. With respect to its analysis of impacts and mitigation measures relating to water quality, population and housing, historic resources, and air quality, the NHPH DEIR repeats many of the same informational inadequacies as the CPHP EIR. 3

Therefore, I refer to selected comment letters on the CPHP EIR as well as San Franciscans' Revised Opening Merits Brief filed in Case No. RG21089332 (attached as Exhibit 2) and San Franciscans' Reply Merits Brief filed in Case No. RG21089332 (attached as Exhibit 3).

1. The DEIR Fails to Lawfully Assess Impacts on Beach Water Quality. 4

Like the CPHP EIR, the NHPH DEIR fails to lawfully assess impacts on beach water quality, and for the same reasons. San Franciscans, therefore, submits under separate cover its comment letters regarding beach water quality impacts on the CPHP Draft EIR with accompanying exhibits. These reasons are also described in detail in San Franciscans' Revised

Opening Merits Brief filed in Case No. RG21089332 (attached as Exhibit 2) and San Franciscans' Reply Merits Brief filed in Case No. RG21089332 (attached as Exhibit 3). 4 cont.

Like the CPHP EIR, the NHPH DEIR fails to describe the physical and regulatory components of the environmental setting as they relate to potentially significant impacts on beach water quality. Information regarding this setting is set forth in detail in San Franciscans' comment letters on the CPHP Draft and Final EIRs and accompanying exhibits. (See also, Ex 2, pp. 25-26; Ex 3, pp.17-18) 5

Just like the CPHP EIR, with respect to Impact HYD-1 the NHPH DEIR improperly bases its less-than-significant impact conclusion on the ratio theory and compliance with other agencies' regulatory requirements. (See San Franciscans' comment letters on the CPHP Draft and Final EIRs; Ex 2, p. 27; Ex 3, pp. 18-19.)

For example, the DEIR states:

> All discharges from the City's CSS to San Francisco Bay, through either the outfalls or the CSD structures, are conducted in compliance with the federal Clean Water Act and the State Porter-Cologne Water Quality Control Act by meeting the requirements set forth in the City's National Pollutant Discharge Elimination System (NPDES) permit (RWQCB Order No. R2-2013-0029) for discharges from the SEP, NPF, Bayside Wet Weather Facilities, and Wastewater Collection System (see Section 4.9.2, Regulatory Framework, below).

(NHPH DEIR, p. 4.9-4.) But the DEIR fails to disclose that the City of San Francisco routinely and frequently violates the terms of its NPDES permits. 6

Similarly, the DEIR states:

> The SFPUC and San Francisco Department of Public Health collaborate to monitor beach water quality in the City. Seventeen beach sites along the perimeter of San Francisco are monitored weekly year-round where water contact recreation is common, including those City beach locations that are identified in the Basin Plan. Water samples are collected and analyzed for three different bacterial indicators of impaired water quality (total coliform, Escherichia coli/fecal coliform, and enterococcus) to determine compliance with the California Sanitation, Healthfulness and Safety of Ocean Water-Contact Sports Areas Regulations, Title 17, California Code of Regulations. When water quality does not meet California standards for water contact recreation, or whenever a CSS discharge occurs that affects a recreational beach, the beach is posted for public notification.

(NHPH DEIR, p. 4.9-13.) But the DEIR fails to disclose the results of this monitoring program. 6 cont.

Like the CPHP EIR, with respect to Impact HYD-1 the NHPH DEIR improperly compresses analyzing the significance of impacts with identifying mitigation measures. (See San Franciscans' comment letters on the CPHP Draft and Final EIRs; Ex 2, p. 27.) 7

With respect to Impact HYD-1, the NHPH DEIR improperly bases its less-than-significant impact conclusion on the modeling results presented in Appendix HYD. This appendix is entirely unsupported for the reasons described in the February 14, 2022, letter from hydrologist Greg Kamman, attached as Exhibit 1. 8

As discussed in more detail in Exhibit 1, the DEIR fails to provide enough information for the reader to evaluate the validity of the modeling results. In particular, the DEIR fails to include, and UCSF refused to provide access to, two reports referenced in the DEIR as:

- At DEIR p. 4.9-26: Arup, 2021. Final UCSF New Hospital at Parnassus Heights StormDrainage Design Report. December 6, 2021.

- At DEIR, Appendix HYD; p. 2 of 13: Arup, "UCSF NHPH Combined Sewer System Modeling Updates", November 1, 2021. 9

I sent a total of three emails to UCSF requesting these documents, on January 28, 2022, February 4, 2022, and February 7, 2022 (attached as Exhibits 6, 7, and 8, respectively). On February 4, 2002, I also left a voice mail for Diane Wong requesting these documents. To date, I have not received the documents or any response to my request. As a result, the DEIR must be recirculated for public comment because its analysis of water quality impacts is so fundamentally and basically inadequate and conclusory in nature that public comment on this issue was in effect meaningless.

2. The DEIR's Analyses of Growth Inducement and Population and Housing Impacts are Inadequate.

Like the CPHP EIR, the NHPH DEIR unlawfully excludes certain housing displacement impacts from analysis, stating: 10

> As stated in the Initial Study, there would no impact related to the following topic for the reasons described below: Displacement of people or housing. The proposed New Hospital and related improvements would not displace any residents or housing units since no housing units currently exist on the project site. Therefore, the proposed NHPH would have no impact related to displacement of housing units or people and would not necessitate the construction of replacement

housing. This topic will not be evaluated further in this section.

(NHPH DEIR, p. 4.12-6) This determination is inconsistent with CEQA because it defines the impact of displacing people or housing solely in terms of physical displacement of existing housing by placing the new hospital in its proposed location. It ignores "displacement of people," which is a physical impact on people, caused by the project's economic and social effects of exacerbating San Francisco's jobs/housing imbalance and the process of gentrification. It also ignores the impacts on the physical environment of building new housing to meet project-induced housing demand. 10 cont.

These are real impacts that have been fully discussed in comments submitted by Planner Terry Wattt on the CPHP EIR and in San Franciscan's merits briefs in Case No. RG21089332. (See Exhibit 4, pp. 8-15; Exhibit 5 [SAR63067-68]; Ex 2, pp. 15-23; Ex 3, pp. 12-17.) 11

Consistent with this unlawful approach, the DEIR defines Impact POP-1 solely in terms of whether the project will cause "substantial *unplanned* population growth" or "create a demand for housing *outside the market area*." (DEIR, 4.12-6-7.) These arbitrary limits on the EIR's analysis of the project's physical impact are unlawful for the same reasons the CPHP's identical limitations are unlawful. These reasons are fully explained in Exhibits 2 (pp. 15-23) and 3 (pp. 12-17.) 12

In addition, the DEIR uses "substantial unplanned growth" as a threshold of significance, and defines "substantial unplanned growth" as "an increase ... that is inconsistent with growth anticipated in adopted planning documents." (DEIR, p. 4.12-7.) Therefore, the DEIR should consider any growth not "anticipated" by ABAG to be "substantial." But the DEIR fails to disclose whether project-induced or cumulative growth is planned or unplanned. Therefore, the reader cannot meaningfully evaluate the DEIR's conclusion that project-induced and cumulative growth is not "substantial" relative to ABAG forecasts. 13

Further, the DEIR admits that "some" Parnassus growth was included in the Plan Bay Area 2040 projections and "conservatively" assumes it was not, but finds it not "substantial." (DEIR 4.12-8.) But the DEIR fails to define "substantial" or explain what level of unanticipated, unplanned growth would be considered "substantial." Consequently, the DEIR's determination is entirely conclusory, 14

Moreover, the second POP-1 TOS (significance criterion "c" on page 4.12-6) is whether the project or cumulative projects would create a housing demand outside the market area, which is defined as the five-county Bay Area region (at p. 4.12-9). The DEIR concludes that the "share of projected household growth" represented by the project's employees would not "trigger shifts of demand ... beyond the regional housing market area." First, there is no evidence that the project's employees are included in the "projected household growth." Second, the bare claim 15 16

that the increase in residents would not trigger any shift in demand is purely conclusory with no support. 16 cont.

3. The DEIR's Analysis of Impacts on Historic Resources is Inadequate.

Like the CPHP EIR, the NHPH DEIR's analysis of impacts on historic resources is inadequate. For example, the DEIR fails to evaluate the impact of the NHPH project on UCSF's Parnassus campus considered as a "historic resource" or "historic district" (defined in Public Resources Code section 5020.1, subdivisions (j) and (h), respectively) in its own right. This comment is explained in more detail in the September 10, 2020, letter from architectural historian Kara Brunzell, regarding the CPHP DEIR, attached hereto as Exhibit 9. (See Ex 9 [AR 6037-38]; see also, Ex 2, pp. 40-42; Ex 3, 26-27.) 17

In addition, the DEIR unlawfully piecemeals CEQA review of the CPHP and NHPH with respect to impacts on the historic significance of the Langley Porter Psychiatric Institute (LPPI) building, stating:

> A number of buildings occupy the footprint of the proposed New Hospital, including the Langley Porter Psychiatric Institute (LPPI) which was determined to be eligible for listing in the National Register and the California Register. These buildings would be demolished and removed prior to the initiation of NHPH construction. Furthermore, as discussed in Chapter 3, Project Description, the demolition and removal of these buildings is being completed separately from, and therefore not associated with, the NHPH project; see also Impact C-CUL-1, below. 18

(NHPH DEIR, pp. 4.4-11.) This approach piecemeals CEQA review of the CPHP and NHPH with respect to impacts on the historic significance of LPPI for the reasons stated in the comment letter of today's date authored by Patrick Soluri on behalf of the Parnassus Neighborhood Coalition ("PNC").

4. The DEIR's Analysis of Impacts on Air Quality is Inadequate.

Like the CPHP EIR, the NHPH DEIR fails to lawfully assess the project's cancer risk impacts, and for the same reasons. San Franciscans, therefore, submits under separate cover its comment letters regarding cancer risk impacts on the CPHP Draft EIR with accompanying exhibits. These reasons are also described in detail in Exhibit 2, pp. 44-51 and Exhibit 3, pp. 29-31). 19

The EIR uses cancer risk thresholds of significance adopted by the Bay Area Air Quality Management District (BAAQMD) for general use without adapting them or how they are applied

to reflect anything unique about this project or its environmental setting. CEQA requires that before UCSF uses such generalized thresholds of significance, it must adopt the thresholds by a public rule-making process in which it must show that the thresholds are supported by substantial evidence. (*Golden Door Properties, LLC v. County of San Diego* (2018) 27 Cal.App.5th 892, 903 (*Golden Door I*).) By failing to undertake this process, UCSF failed to proceed in the manner required by law. 19 cont.

The DEIR describes existing conditions (i.e., baseline) for TAC-related cancer risk from ambient TAC concentrations as 161.8 cases per million. (NHPH DEIR 4.2-10.)

The DEIR describes the existing conditions for cancer risk from diesel particulates (DPM) as follows:

> CARB identified DPM as a TAC in 1998, primarily based on evidence demonstrating cancer effects in humans. The exhaust from diesel engines includes hundreds of different gaseous and particulate components, many of which are toxic. Mobile sources such as trucks and buses are among the primary sources of diesel emissions, and concentrations of DPM are higher near heavily traveled highways. The board estimated that as of 2000, the average Bay Area cancer risk from exposure to DPM, based on a population-weighted average ambient DPM concentration, is approximately 480 in one million, which is much higher than the risk associated with any other toxic air pollutant routinely measured in the region. The statewide risk from DPM as determined by the board declined from 750 in one million in 1990 to 570 in one million in 1995; by 2012, the board estimated the average statewide cancer risk from DPM at 520 in one million (CARB, 2009; CARB, 2019).

(NHPH DEIR 4.2-11) 20

The DEIR's description of the overall cancer risk is insufficient because the DPM baseline risk is not current as of the date of the Notice of Preparation of the EIR.

The DEIR borrows its thresholds of significance for project-level and cumulative cancer risk impacts from BAAQMD's CEQA Guidelines and deploys them without regard to the extreme baseline cancer risk in San Francisco. In doing so, the DEIR commits the fundamental error of failing to add the Project's effects to the baseline for purposes of determining significance because it applies the threshold without regard to the magnitude of the baseline cancer risk. Under CEQA, an EIR analyzes the environmental impacts of the proposed project on the environmental setting (or "baseline"). (*Communities for a Better Environment v. South Coast Air Quality Management Dist.* (2010) 48 Cal.4th 310, 315; *San Joaquin Raptor/Wildlife Rescue Center v. County of Stanislaus* (1994) 27 Cal.App.4th 713, 722-23; *Friends of the Eel River v.* 21

Sonoma County Water Agency (2003) 108 Cal.App.4th 859, 88-82; Guidelines, §§ 15125 (a)(1), 15126.2 (a).)

21 cont.

Regarding project-level impacts, the DEIR states: "The estimated excess cancer risk for a 30-year lifetime exposure from operation of the NHPH would be 8.6 per million, which is below the 10 in one-million excess cancer risk threshold." (NHPH DEIR 4.2-34.)

Regarding cumulative impacts, the DEIR states:

> When added to the projected increased cancer risks from the NHPH project-level analysis presented in Table 4.2-11 of 8.6 in one million, resultant increased operational cancer risk of 18.86 in one million (10 in one million plus 0.26 in a million for RAB and 8.6 in a million for NHPH) would be well below the cumulative threshold of 100 in one million.

(NHPH DEIR 4.2-34.)

The DEIR's uncritical use of the 10 additional cases per million project-level threshold implies that an increase of less than ten additional cases per million is always less than significant, regardless of the baseline risk.

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Similarly, the DEIR's uncritical use of the 100 additional cases per million cumulative threshold implies that an increase of less than 100 additional cases per million is always less than cumulatively considerable, regardless of the baseline risk.

These are legal errors, because the severity of existing conditions is always a factor in determining significance of project impacts. (*Communities for a Better Environment v. California Resources Agency* (2002) 103 Cal.App.4th 98, 114 ["the guiding criterion on the subject of cumulative impact is whether any additional effect caused by the proposed project should be considered significant given the existing cumulative effect"], disapproved on other grounds by *Berkeley Hillside Preservation v. City of Berkeley* (2015) 60 Cal.4th 1086; *Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692, 718.) The EIR's unevaluated assumption that an increase of less than ten cases per million is always less than significant is a policy judgment, not a finding of fact based on evidence. This violates CEQA because determinations of significance must be based on evidence. (*Protect the Historic Amador Waterways v. Amador Water Agency* (2004) 116 Cal.App.4th 1099, 1108-1109 ["thresholds cannot be used to determine automatically whether a given effect will or will not be significant"].)

Thank you for your attention to this matter.

Very Truly Yours,

Tom Lippe

Thomas N. Lippe

List of Exhibits

1. February 14, 2022, letter from hydrologist Greg Kamman.
2. San Franciscans' Revised Opening Merits Brief filed in Case No. RG21089332.
3. San Franciscans' Reply Merits Brief filed in Case No. RG21089332.
4. September 9, 2020, letter submitted by Planner Terry Wattt on the CPHP EIR.
5. January 19, 2021, letter submitted by Planner Terry Wattt on the CPHP EIR.
6. Email dated January 28, 2022, from Thomas Lippe to Dianne Wong, UCSF.
7. Email dated February 4, 2022, from Thomas Lippe to Dianne Wong, UCSF.
8. Email dated February 7, 2022, from Thomas Lippe to Dianne Wong, UCSF.
9. September 10, 2020, letter from architectural historian Kara Brunzell regarding the CPHP DEIR.

C050f NHPH DEIR Pop WQ Hist AQ.wpd

EXHIBIT 1

cbec eco engineering

Hydrology | Hydraulics | Geomorphology | Design | Field Services

February 14, 2022

Mr. Tom Lippe, Law Office of Thomas N. Lippe, APC
201 Mission Street, 12th Floor
San Francisco, CA 94105

Subject: Technical Review and Comment on Draft EIR
UCSF New Hospital at Parnassus Heights

Dear Mr. Lippe:

I am a hydrologist with over thirty years of technical and consulting experience in the fields of geology, hydrology, and hydrogeology. I have been providing professional hydrology and geomorphology services in California since 1989 and routinely manage projects in the areas of surface- and groundwater hydrology, water supply, water quality assessments, water resources management, and geomorphology. Most of my work has been in the Coast Range watersheds of California, including Sonoma County. My areas of expertise include: characterizing and modeling watershed-scale hydrologic and geomorphic processes; evaluating surface- and ground-water resources/quality and their interaction; assessing hydrologic, geomorphic, and water quality responses to land-use changes in watersheds and causes of stream channel instability; assisting and leading in the development of CEQA environmental compliance documents and project environmental permits; and designing and implementing field investigations characterizing surface and subsurface hydrologic and water quality conditions. I earned a Master of Science degree in Geology, specializing in sedimentology and hydrogeology as well as an A.B. in Geology from Miami University, Oxford, Ohio. I am a Certified Hydrogeologist (CHg) and a registered Professional Geologist (PG) in the state of California. A copy of my current CV is attached.

I have been retained by your practice to review the DEIR (including Appendix HYD) for the UCSF New Hospital at Parnassus Heights and evaluate if the project may impact surrounding properties and the environment, with a particular emphasis on beach water quality. Based on my review, it is my professional opinion that the IS/MND is inadequate in evaluating the potential significant impacts of project actions on hydrology and water quality. The rationale for this opinion is based on multiple findings presented below

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2544 Industrial Blvd., West Sacramento, CA 95691 USA
T 916.231.6052 F 916.669.8886 info@cbecoeng.com
www.cbecoeng.com

1.0 Background

Section 4.9 Hydrology and Water Quality of the DEIR indicates that all NHPH project stormwater and sanitary flow discharge to the City of San Francisco's Combined Sewer System (CSS), which is conveyed to the City's Bayside treatment, storage and discharge facilities. The DEIR provides an analysis on the impacts of these discharges on CSS capacity, flooding and water quality to receiving waters. This analysis addresses the changes in stormwater and wastewater flows from 21.6 acres of the NHPH site and adjacent upstream area within the campus site that contribute flows that pass through the NHPH site and discharge into the City CSS main in Parnassus Avenue. On page 4.9-15 of the DEIR, the DEIR states that UCSF has established stormwater and wastewater performance standards that the NHPH must meet to avoid off-site impacts. Accordingly, the NHPH shall:

1. Avoid increasing the likelihood of surcharges by exceeding the capacity of the pipes in the City CSS;
2. Avoid increasing the extent or duration of ponding or overland flow; and
3. Avoid discharges to the City's CSS that could increase the frequency or volume of CSDs to the receiving waters.

The DEIR goes on to state, "*To meet the third (hydrologic) performance standard, UCSF has committed to ensure that the total volume of stormwater discharges from the Parnassus Heights campus site **in wet weather** is decreased by an amount sufficient to offset flows from any increase in impervious surfaces and any increases in wastewater discharges as a result of the proposed new development. Necessary reductions may be achieved via LID, on-site detention and re-use, on-site detention for discharge, and/or other strategies in conformance with the City's Stormwater Management Ordinance, and may be less than the unmitigated total wet weather discharges from Parnassus Heights campus site if modeling demonstrates there is sufficient storage, pumping, and treatment capacity in the City's CSS to avoid increased discharges to the receiving waters from the CSS discharge structures*." 24

The DEIR indicates (page 4.9-17) that the NHPH would result in an increase in peak stormflows generated on the NHPH site, and an increase in wastewater generation of 125,280 gallons per day (gpd), which would be collected in the University's on-campus CSS and storm drain system and discharged off-site into the City's CSS. As cited in the DEIR[1], USCS commissioned three (3) hydrologic studies by ARUP and Hydroconsult Engineers to estimate the increases in stormwater and wastewater that result from the NHPH project and to develop and estimate of the storage needed to detain peak flows and volumes so that the stormwater and wastewater performance criteria would be met. Appendix HYD to the DEIR

- [1] At DEIR page 4.9-26: Arup, 2021. Final UCSF New Hospital at Parnassus Heights Storm Drainage Design Report. December 6, 2021.
- At DEIR Appendix HYDA; page 2 of 13: Arup, UCSF NHPH Combined Sewer System Modeling Updates, November 1, 2021.
- At DEIR page 4.9-18: Hydroconsult Engineers, 2021, UCSF New Hospital at Parnassus Heights (NHPH) Modeling to Evaluate NHPH Impacts on Downstream Flooding, Sewer Capacity and Combined Sewer Discharges (CSDs), December 3, 2021.

presents a summary of the ARUP November 1, 2021 study. Based on the results of these studies, the DEIR determined that the project would not significantly impact Hydrology and Water Quality and no mitigation is required.

24 cont.

2.0 Concerns about CEQA Findings to Hydrology and Water Quality

Based on the information provided in DEIR I am not able to evaluate the validity of the finding of no significant impact to Hydrology and Water Quality. In addition, based on the information provided in the DEIR, I have concerns about the interpretation of hydrologic study results. As a result, in my opinion, the project may result in significant adverse impacts to water quality of receiving waters.

25

2.1 Lack of Study Information Presented in DEIR

The DEIR and Appendix HYD base their findings and conclusions on technical modeling reports that are not included in the DEIR and therefore the validity of these findings cannot be evaluated. These reports are referred to as "Arup, 2021. Final UCSF New Hospital at Parnassus Heights Storm Drainage Design Report. December 6, 2021" (referenced at DEIR page 4.9-26) and "Arup, UCSF NHPH Combined Sewer System Modeling Updates, November 1, 2021" (referenced at DEIR, Appendix HYD; page 2 of 13). In order to evaluate these findings, I would need to see specific information contained in the modeling reports that would address specific questions pertaining to project storm- and waste-water operations, including the following.

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- The summary of model findings refers to a single total volume of water discharged to the CSS. What are the corresponding volumes and flow rates from the storm water vs. wastewater contributions that make up the total? What are the representative values under baseline conditions used for comparison? Does the relative contribution from wastewater discharge increase over the stormwater discharge under project conditions? This last question is particularly important to determine impacts on water quality if the ratio of wastewater increases over stormwater under project conditions.
- The modeling was used to determine the necessary size of detention basin storage required to detain peak flows and volumes for the Project. How was this analysis completed?

27

- Does storage infrastructure creation result in their own potential impacts to the environment? The DEIR states (pages 3-29 and 4.9-18), "*The preferred proposal is to repurpose the existing underground diesel fuel tanks in Medical Center Way to provide storage for approximately 120,000 gallons of stormwater, and install a new underground tank at the Ammonia House site to store an additional 30,000 gallons of stormwater*." The DEIR doesn't provide a description of how the new detention basin would be built, other than a reference to it being in the "basement" (DEIR page 3-29 and Appendix PD2 page sheet 2). This is an omission in the project description.

28

- The estimated net change in water demand for the project is 199,140 gpd (Appendix WSE, Appendix B; table on last page of DEIR) and the estimated increase in wastewater flow from NHPH is 125,280 gpd (DEIR page 4.9-18). What is the net change in storm water flow? What

29

is the fate of the other 73,860 gpd of daily water used by the NHPH (i.e., where does that water go)? Is this captured in the modeling? 29 cont.

- The Project proposes constructing a 150,000-gallon on-site storm water detention facility (DEIR page 3-29 and 4.9-18). Given the increase in daily wastewater generation and presumed storage of this water in the detention facility, how does the storage of storm water affect the concentration of wastewater constituents being discharged to the CSS (i.e., with less storm water available to dilute wastewater, does this increase the concentration of wastewater constituents discharged to the CSS and receiving waters)? When and how is water released from the detention facility, especially during large rainfall events? How is this factored into modeling? How does the "emergency sewer tank" indicated on sheet 2 of Appendix PD2 factor into the modeling of discharges to the CSS? 30

These answers to these questions are important to determine the relative changes in storm water and wastewater concentrations being discharged to the CSS, treatment facilities and receiving waters. The EIR's finding can't be validated without providing the technical studies that address this question and the DEIR should be considered incomplete until they provide the background information that provides the reader with the ability to do so. 31

2.2 Increased Discharge Volume during 5-year, 24-hour Storm

The modeling results for the 5-year storm indicate that the total flow volume from the NHPH study area would increase from 0.210 MG under existing conditions to 0.213 MG with the NHPH project (Appendix HYD, page 4). These results indicate an increase in the volume of discharge to receiving waters and exceeds the stormwater and wastewater performance standard number 3 listed above. The appendix and DEIR consider that because this is only a small increase, they aren't significant. However, the DEIR does not provide the rationale for this determination, even though this significance criteria is exceeded. 32

2.3 Potentially Contradictory Findings, 100-year Storm Simulation

Modeling results summarized in Appendix HYD indicate there is no increase in flood volume from the NHPH during the 100-year storm model simulation. This result is counter-intuitive given the increase in flood volume experienced under the 5-year storm simulation. I would have expected an increase in discharge volumes during a 100-year storm given the 5-year storm simulation results. An evaluation of these counter-intuitive results isn't possible without access to the Arup report(s). 33

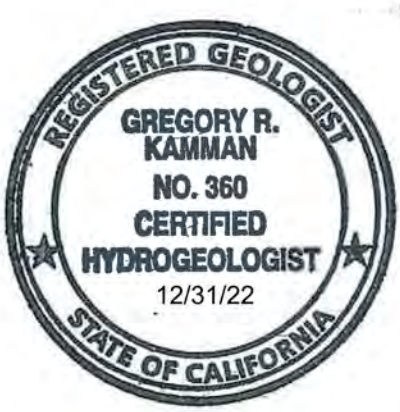
2.4 Questionable Use of Typical Water Year Type in Model Analysis

To evaluate the stormwater and wastewater performance standard number 3 listed above, the model analysis used a typical year precipitation to calculate changes in the predicted frequency and volume of combined sewer discharge to receiving waters. The rationale for choosing a year of average annual frequency and volume of combined sewer discharge (CSD) to evaluate these impacts on receiving waters is not provided in Appendix HYD. It is my opinion that water quality exceedances to receiving waters occur more frequently during wet years when there are higher rates and volumes of CSD and modeling using typical year hydrology masks the adverse findings that would occur during a wet year. Therefore, the DEIR should be considered incomplete until it evaluates the likely adverse impacts on receiving waters during above average wet water year-types. 34

Please feel free to contact me with any questions regarding the material and conclusions contained in this letter.

Sincerely,

Greg Kamman, PG, CHG
Senior Ecohydrologist



Responses to Comments from Law Offices of Thomas N. Lippe, APC

Please note that Comment Letter O-TL1 contained several exhibits. A portion of Exhibit 1 in Comment Letter O-TL1 included comments on the NHPH Draft EIR, which are responded to, below. The remainder of Exhibit 1, and all of Exhibits 2 through 9 in Comment Letter O-TL1 did not comment directly on the NHPH Draft EIR and no responses are required. These exhibits are included in Appendix O-TL1 in this Final EIR.

O-TL1-1 The commenter asserts that the citizens group it represents objects to approval of the project. This comment does not address the adequacy of the NHPH Draft EIR; consequently, as explained in Master Response 1: Non-CEQA Comments, no response is required. However, the comment has been noted and will be forwarded to the decision-makers.

O-TL1-2 The commenter generally asserts the NHPH Draft EIR fails to comply with CEQA. Please see the specific responses provided below.

O-TL1-3 The commenter indicates that the citizen group it represents is currently challenging the legality of the CPHP Final EIR. This comment does not address the adequacy of the NHPH Draft EIR; no response is required.

The commenter also asserts that the NHPH Draft EIR repeats many of the same informational inadequacies as the CPHP EIR for analysis of impacts and mitigation measures related to water quality, population and housing, historic resources, and air quality. For specific comments raised on the NHPH Draft EIR related to water quality, please see response to Comments O-TL1-4 through O-TL1-9, and response to Comments O-TL1-23 through O-TL1-34. For comments raised on the NHPH Draft EIR related to population and housing, please see response to Comments O-TL1-10 through O-TL1-16. For comments raised on the NHPH EIR related to historic resources, please see response to Comments O-TL1-17 and O-TL1-18. For comments raised on the NHPH Draft EIR related to air quality, please see response to Comments O-TL1-19 through O-TL1-22.

O-TL1-4 The commenter asserts that the NHPH Draft EIR fails to lawfully assess impacts on beach water quality for the reasons described in the San Franciscans' for Balanced and Livable Communities (San Franciscans') Revised Opening Merits Brief filed in Case No. RG21089332 and San Franciscans' Reply Merits Brief filed in Case RG21089332.

The briefs referenced by the commenter pertain specifically to the CPHP and the CPHP Final EIR, and do not represent formal comments on the content and adequacy of, the NHPH Draft EIR. The following discussion provides context for why the comments previously made on the CPHP EIR are not applicable to the NHPH Draft EIR.

The descriptions of the CPHP and NHPH, and the associated CEQA analyses conducted in the respective EIRs for these projects, are necessarily different. The CPHP is a plan to meet projected space needs for a number of programs in research, patient care and education at the Parnassus Heights campus site. The CPHP program involved the development of 2.90 million gross square feet (gsf) of new building space at the Parnassus Heights campus site by 2050, including a range of clinical, educational, research, and housing uses. Accordingly, the CPHP Final EIR programmatically addressed the potential environmental impacts of implementation of the entire space program under the CPHP (it also included a project-level analysis of three CPHP Initial Phase projects – Irving Street Arrival, Research and Academic Building, and initial phase of Aldea Housing development). To mitigate the potential for increases in stormwater and wastewater volumes generated under the CPHP to contribute to off-site hydrologic and water quality effects (as analyzed in Impacts HYD-1, HYD-2, C-HYD-1 and C-HYD-2), the CPHP Final EIR established stormwater and wastewater performance standards that subsequent CPHP development would be required to meet (as included in CPHP Mitigation Measure HYD-1). The CPHP Final EIR determined that implementation of this mitigation measure, along with compliance with required regulatory permits and programs, would sufficiently ensure potential hydrologic and water quality effects of the CPHP, including the CPHP's contribution to cumulative effects, would be less than significant.

In contrast, the NHPH project involves the implementation of the proposed New Hospital project by 2030, along with certain related improvements. Accordingly, the NHPH Draft EIR provides a project-level analysis of environmental impacts of the proposed New Hospital and its related improvements. The NHPH Draft EIR relies on a stormdrainage design report prepared by Arup for the NHPH project that provides project-specific stormwater and wastewater technical analyses. As determined through on-campus hydrologic modeling, the Arup report identifies a number of on-site infrastructure improvements to be incorporated into the proposed NHPH, including stormwater and wastewater collection, and stormwater storage facilities that would provide both retention and detention storage uses. In addition, in support of the Draft EIR, a hydrologic modeling analysis of the NHPH's off-campus downstream effects on the City's combined sewer system (CSS) infrastructure and receiving waters was conducted by Hydroconsult Engineers Inc. in alignment with the stormwater and wastewater performance standards identified in CPHP Mitigation Measure HYD-1.

As described in the NHPH Draft EIR Impact HYD-1, the project-specific analysis demonstrates that the NHPH would not exceed the capacity of the City's CSS, would not increase the extent or ponding of overland flow, would not increase the frequency or volume of combined sewer discharges (CSDs) to receiving waters, and would not result in adverse water quality effects associated with additional sources of polluted runoff. As a result, the NHPH Draft EIR shows that with the incorporation of the proposed NHPH project features,

including on-site stormwater storage facilities, along with UCSF compliance with numerous applicable permits and programs, including National Pollutant Discharge Elimination System (NPDES) Construction General Permit (CGP), Phase II Municipal Separate Storm Sewer System (MS4) permit, and UCSF Storm Water Program, consistent with the City's Stormwater Management Ordinance, the potential for the NHPH to violate water quality or waste discharge requirements would be less than significant. In addition, as demonstrated in Impact HYD-2 in the NHPH Draft EIR, with the proposed on-site wastewater and stormwater facilities, and UCSF's proposed incorporation of post-construction best management practice (BMP) requirements and low impact development (LID) measures into the project in compliance with applicable permits, NHPH impacts to off-site flooding and to the capacity of downstream stormwater drainage capacity from stormwater flow increases would be less than significant. Similarly, as demonstrated in Impacts C-HYD-1 and C-HYD-2, the potential NHPH contribution to cumulative hydrology and water quality impacts would also be less than significant.

As discussed above, comments in the briefs referenced by the commenter associated with the CPHP Final EIR do not represent formal comments on the content and adequacy of the NHPH Draft EIR. To the extent any specific comments on hydrology and water quality raised in Comments O-TL1-5 to O-TL1-9, below, are directly related to the NHPH Draft EIR, those comments are responded to below.

O-TL1-5 The commenter asserts that the NHPH Draft EIR fails to describe the physical and regulatory components of the environmental setting as they relate to potentially significant impacts on beach water quality.

To the contrary, the NHPH Draft EIR Section 4.9, *Hydrology and Water Quality* includes a thorough description of the existing physical and regulatory setting. In particular, the commenter is referred to the following information in the *Environmental Setting* and *Regulatory Framework*:

- Page 4.9-6, in the *Water Quality* subsection in the NHPH Draft EIR, which describes those existing Regional Water Quality Control Board (RWQCB) listed impaired water bodies and beaches in the San Francisco vicinity, and identifies the types of pollutants for which these locations are listed as impaired.
- Page 4.9-9, under *Impaired Water Bodies and TMDLs* subsection, the NHPH Draft EIR discusses that the USEPA has also approved TMDLs for bacteria in certain San Francisco Bay beaches (including Candlestick Point Beaches, Aquatic Park Beach, and Crissy Field), and they have been officially incorporated into the Basin Plan. The NHPH Draft EIR also discusses RWQCB adopted Order No. R2-2016-0021, which amended the Basin Plan for the San Francisco Bay Basin to establish TMDL and Implementation Plan for bacteria in these San Francisco Bay beaches.

- Page 4.9-12, the *SEP, NPF, Bayside Wet Weather Facilities and Wastewater Collection System NPDES Permit* subsection in the NHPH Draft EIR discusses that "the existing water quality in the Bay and the Ocean has been negatively affected, on occasions, by CSD discharges, which has affected the beneficial uses of the San Francisco Bay, and the use of beaches."
- Page 4.9-13, the *San Francisco Beach Water Quality Monitoring Program* subsection in the NHPH Draft EIR, which discusses that seventeen beach sites in San Francisco are monitored weekly year-round where water contact recreation is common; and that when water quality does not meet California standards for water contact recreation, or whenever a CSS discharge occurs that affects a recreational beach, the beach is posted for public notification.

O-TL1-6 The commenter asserts that Impact HYD-1 in the NHPH Draft EIR improperly bases its less than significant impact conclusion on the ratio theory and compliance with other agencies' regulatory requirements. However, the NHPH Draft EIR does not rely on a ratio theory. As described in response to Comment O-TL1-4, above, the NHPH Draft EIR provides a project-level analysis of hydrologic and water quality impacts of the proposed New Hospital and its related improvements. This analysis is based on hydrologic modeling of on-campus conditions, including proposed on-site stormwater storage facilities; and of downstream off-campus conditions within the City CSS system and receiving waters, pursuant to the stormwater and wastewater performance standards consistent with City requirements identified in NHPH Draft EIR. The conclusions as to the significance of Impact HYD-1 are not based on any suggestions that the NHPH would only make a di minimus contribution to an existing impact.

The commenter includes an excerpt from page 4.9-4 in the NHPH Draft EIR, which discusses that discharges from the City's bayside facilities to San Francisco Bay are conducted in compliance with federal Clean Water Act and State Porter-Cologne Water Quality Control Act by meeting requirements set forth in the City's NPDES permit (RWQCB Order No. R2-2013-0029). The commenter then asserts that the City of San Francisco routinely and frequently violates the terms of its NPDES permits. As discussed in response to Comment O-TL1-5, above, the NHPH Draft EIR identifies the impaired water bodies and beaches in the San Francisco vicinity, lists the pollutants for which these locations are listed as impaired; and acknowledges that the existing water quality in the Bay and the Ocean has been negatively affected, on occasion, by CSD discharges, which has affected the beneficial uses of the San Francisco Bay, and the use of beaches.

The commenter then includes an excerpt from page 4.9-13 in the NHPH Draft EIR that provides an overview of the San Francisco Beach Water Quality Monitoring Program, and asserts that the NHPH Draft EIR fails to disclose the results of the monitoring program. As discussed in the NHPH Draft EIR, the SFPUC and the San Francisco Department of Public Health (SFDPH) collaborate to monitor beach water quality. Seventeen sites are included in the program and monitored weekly year-round. Water samples are collected and analyzed for

three different bacterial indicators of impaired water quality to determine compliance with the California Sanitation, Healthfulness and Safety of Ocean Water-Contact Sports Areas Regulations, Title 17, California Code of Regulations. The City's website for this program[1] presents only weekly results for each monitoring site for the most recent approximate 3-month period; and as such, no comprehensive long-term (e.g., annual) results are available that would be useful for presentation in this EIR for informational purposes.

O-TL1-7 The commenter asserts that Impact HYD-1 in the NHPH Draft EIR improperly compresses analyzing the significance of impacts with identifying mitigation measures.

The commenter is referred to response to Comment O-TL1-4, above. As described in that response, the NHPH Draft EIR provided a project-level analysis of hydrologic and water quality impacts of the proposed New Hospital and its related improvements. The NHPH Draft EIR demonstrates that runoff and wastewater generated by the NHPH would not violate water quality or waste discharge requirements (Impact HYD-1) or result in an increase in off-site flooding, or adversely affect the capacity of downstream stormwater drainage capacity (Impact HYD-2), or result in a considerable contribution to cumulative effects in these topic areas (Impacts C-HYD-1 and C-HYD-2). Accordingly, since these impacts are determined to be less than significant, no mitigation measures are required under CEQA.

O-TL1-8 The commenter asserts that the less than significant conclusion in NHPH Draft EIR Impact HYD-1 is based on modeling results in NHPH Draft EIR Appendix HYD that are unsupported based on the reasons described in Exhibit 1 attached to the comment letter.

Please see responses to Comments O-TL1-9, and O-T1-23 to O-TL1-34, below.

O-TL1-9 The commenter asserts that the NHPH Draft EIR fails to provide enough information for the reader to evaluate the validity of the modeling results, and specifically references the following reports:

- Arup *Final UCSF New Hospital at Parnassus Heights Storm Drainage Design Report*. December 6, 2021.
- Arup *UCSF NHPH Combined Sewer System Modeling Updates*, November 1, 2021.

The December 6, 2021 Arup report was directly cited in the NHPH Draft EIR. The November 1, 2021 report was cited in Appendix HYD in the NHPH Draft EIR. Both sources of information were included in the administrative record

[1] https://sfpuc.org/programs/ocean-and-beach-monitoring

compiled for the Draft EIR, and further, have been included as appendices in this Final EIR, as **Appendix HYD-A** and **Appendix HYD-B**, respectively.

The commenter also references three emails to UCSF requesting the above documents. These emails are also presented in Exhibits 6, 7 and 8 in the commenter's letter (included in Appendix O-TL1 in this Comments and Responses document). The commenter asserts that the NHPH Draft EIR must be recirculated for public review because its analysis of water quality is so inadequate and conclusory in nature such that public comment on this issue was in effect meaningless. As demonstrated in the individual responses provided to the comments raised, and further in Section 8.1.4 in this Comments and Responses document, none of the specific issues identified in the comments, or response to these comments, result in any of the conditions of Section 15088.5(a) being met. Thus, UCSF has determined that recirculation of the Draft EIR on the issues raised by the comments, including this comment, is not warranted.

O-TL1-10 The commenter argues that UCSF inappropriately excluded the displacement of housing from detailed analysis in the NHPH Draft EIR, and that displacement of population due to jobs/housing imbalance and gentrification should have been included in the analysis. The commenter also asserts that the NHPH Draft EIR ignores the physical impacts from the construction of housing that would be built to serve the project's housing demand.

Direct displacement of existing residents or housing is clearly an issue to be considered under CEQA. Section 4.12, *Population and Housing* in the NHPH Draft EIR is compliant with CEQA as it considers the issue of the direct displacement of people or housing due to the project, and finds that there would be no such displacement because no housing is located on the site of the proposed NHPH.

The CEQA checklist question under Population and Housing does not require an analysis of jobs/housing imbalance or gentrification. Gentrification or displacement of existing residents and businesses due to increases in real estate costs is an indirect economic effect with associated social effects. Such indirect effects on housing are social and economic effects, which, though important, are not properly considered environmental impacts under CEQA in the absence of physical effects (*Joshua Tree Downtown Business Alliance v. County of San Bernardino* (2016); *Maintain Our Desert Environment v. Town of Apple Valley* (2004))

It is outside the scope of a population and housing impact analysis to analyze the physical impacts from the construction of new housing, unless the new housing is part of the proposed project. Such an analysis is appropriately addressed under growth inducing effects of the proposed project. As required per CEQA Guidelines Section 15126.2(e), the NHPH Draft EIR includes on pages 5-4 and 5-5 in Section 5.4, *Growth Inducing Effects*, a discussion of the ways in which the proposed NHPH could directly or indirectly foster economic or population growth,

or the construction of additional housing and how that growth and additional housing would, in turn, affect the surrounding environment. As the courts have explained: An EIR is not "required to make a detailed analysis of the impacts of a project on housing and growth. Nothing in the Guidelines, or in the cases, requires more than a general analysis of projected growth. The detail required in any particular case necessarily depends on a multitude of factors, including, but not limited to, the nature of the project, the directness or indirectness of the contemplated impact and the ability to forecast the actual effects the project will have on the physical environment" (*Clover Valley Foundation v. City of Rocklin* (2011)). Even where a project may indirectly result in a need for additional housing outside the project area, for example, by creating employment opportunities, an EIR is sufficient if it "warns interested persons and governing bodies of the probability that additional housing will be needed so that [such persons] can take steps to prepare for or address that probability" *(Napa Citizens for Honest Government v. Napa County Bd. of Supervisors* (2001)).

O-TL1-11 The commenter refers to similar assertions made by other commenters on the CPHP EIR and in legal briefs submitted by the commenter in the pending CPHP litigation.

All relevant comments received on the CPHP Draft EIR are fully addressed in the CPHP Final EIR. With respect to the NHPH Draft EIR, as shown in the response above, the population and housing impacts are accurately analyzed in Section 4.12 consistent with the CEQA Guidelines Appendix G, and the growth inducing impacts are accurately analyzed in Section 5.4 consistent with CEQA Guidelines Section 15126.2(e).

O-TL1-12 The commenter asserts that the NHPH Draft EIR unlawfully limits the scope of the population and housing impacts as presented in Impact POP-1 to an assessment of whether the project would cause substantial unplanned population growth or a demand for housing outside the market area.

Please note that the first criterion that asks whether the project would cause substantial *unplanned* growth is taken verbatim from Appendix G of the CEQA Guidelines and reflects the State's guidance relative to the types of impacts related to population and housing that would constitute significant environmental impacts. The University has not inserted the word "unplanned" to narrow the scope of analysis or bias the impact analysis in any way.

As the Appendix G CEQA Checklist questions show, CEQA does not require a CEQA document to analyze how a project's demand for housing would be met or whether affordable housing would be available to the project-related population. The third criterion used in the NHPH Draft EIR that focuses on the project's demand for housing was developed by UCSF during the preparation of the 2014 LRDP EIR, and is not derived from the CEQA Guidelines. As a lead agency, the

University is within its right to develop and use significance thresholds that it finds appropriate for its analysis.

O-TL1-13 The commenter asserts that the NHPH Draft EIR fails to disclose whether the project-induced population growth or cumulative growth would be substantial or unplanned.

The project-related population increase of 1,449 persons is reported on page 4.12-7 and analyzed relative to ABAG projections on the following page. The NHPH Draft EIR appropriately concludes that even if it were to be assumed that the project-related population increase is not accounted for in the ABAG projections, an increase of 1,449 persons would not be substantial relative to the existing and projected population of the 5-county study area.

The cumulative impact of the proposed project on population and housing is analyzed in Impact C-POP-1 in the NHPH Draft EIR. As discussed there, the proposed NHPH, in combination with cumulative development under the CPHP would result in a student, faculty, and staff population increase of approximately 5,180 by 2050 at the campus site. This combined growth would similarly not substantially increase the employment levels in San Francisco above those projected by ABAG. The NHPH Draft EIR provides a complete analysis of both the project-level and cumulative impacts of the proposed NHPH project.

O-TL1-14 The commenter asserts that the NHPH Draft EIR does not define what level of unplanned growth would be considered substantial, and therefore the NHPH Draft EIR's determination is conclusionary.

The NHPH Draft EIR, Section 4.12, *Population and Housing,* under Approach to Analysis, page 4.12-6, defines "substantial unplanned population growth" resulting from implementation of the NHPH as "an increase in population or employment that is inconsistent with growth anticipated in adopted planning documents." The NHPH Draft EIR analyzes existing population and employment in the five-county study area, establishing an appropriate baseline, and then analyzes the projected growth in population and employment associated with the NHPH.

As a first step, the Draft EIR explains that because some of the employment growth associated with the NHPH was previously included in the 2014 LRDP, that employment and population growth is already accounted for in *Plan Bay Area 2040*. In fact, UCSF received confirmation from ABAG that UCSF employment and population growth under the 2014 LRDP is accounted for in ABAG's employment and population projections. Further, for reasons presented in response to Comment O-TL1-15 below, based on the methodology used by ABAG to develop population and employment projections, it is reasonable to assume that all of the NHPH-related employment and population growth is accounted for in the growth analyzed and

planned for in *Plan Bay Area 2040*. In other words, NHPH employment and population growth does not represent unplanned growth.

The NHPH Draft EIR, however, also includes a conservative analysis that assumes that NHPH employment growth is not included in the Bay Area growth projections. For this conservative analysis, the NHPH Draft EIR presents population data to explain to the reader why the project-related population increase would not be considered substantial. The commenter is referred to pages 4.12-8 and -9 in the NHPH Draft EIR which explain that if about 53 percent of the new employees associated with the project live in San Francisco, and adjusting for persons per household, the project would be responsible for an approximately 0.8 percent increase in the City's population. If it is conservatively assumed that all new employees would live in San Francisco, and adjusting for persons per household, the project would be responsible for a 1.5 percent increase in the City's population. Both these percentage increases are small relative to the 28 percent increase in population projected to occur between 2010 and 2030 in San Francisco. The NHPH Draft EIR's determination is not conclusionary.

O-TL1-15 The commenter asserts that contrary to the NHPH Draft EIR analysis under Impact POP-1, there is no evidence that the project's employees are included in the projected household growth.

The commenter is referred to page 4.12-8 in the NHPH Draft EIR. Even though the University has reason to believe that the project's employment and household growth is accounted for in ABAG's employment and population projections for San Francisco, conservatively the University has based the analysis in the NHPH Draft EIR on the assumption that that the project's employment and population is not included and has proceeded to analyze it as incremental employment and population growth.

The reason why the University believes that the employment and population is included in ABAG projections is because of the methodology that ABAG uses to develop its projections. As stated by ABAG in the Regional Forecast Supplemental Report, "To better understand growth dynamics in the nine-county Bay Area region, the Association of Bay Area Governments (ABAG) tracks and projects the region's demographic and economic trends. The regional forecast is an important component of the *Plan Bay Area 2040*, the Bay Area Sustainable Communities Strategy (SCS), and provides a set of common regional assumptions informing the discussion among regional and local jurisdictions and organizations of how the region might grow. The forecast describes changes in employment, population, households, and income distribution over three decades for the region, focusing on long-term trends, rather than cyclical variations. The regional forecast also serves as the control totals for the scenario analysis in which the estimated increment of growth is econometrically distributed to jurisdictions and smaller geographic areas within the region according to a set of policy assumptions."

As a first step, ABAG used a suite of customized and in-house models, including a population model (Pitkin Myers model) and an economic model (REMI) to project economic activity, including changes in employment, population growth and composition, household growth, income distribution, and the regional housing control total at the regional level. Regarding employment projections, both national and Bay Area data were input into the economic model to develop regional projections of employment by major sector, including health and education services sector. Once regional projections were developed, in a second step, they were used as control to develop small area projections (i.e., at the local jurisdiction level such as the City of San Francisco). Due to the top- down approach used by ABAG to develop the regional and local area projections, it is reasonable to conclude that the projected employment growth at the Parnassus Heights campus site, including that associated with the proposed NHPH, and the related population growth and housing demand are accounted for in the ABAG projections that form the basis of *Plan Bay Area 2040,* and the NHPH-related employees are included in the projected growth.

O-TL1-16 The commenter asserts that the NHPH Draft EIR analysis under Impact POP-1 that the project's housing demand would not trigger any shifts in demand outside the five-county study area is conclusionary and not supported by analysis.

The NHPH Draft EIR presents projected housing information from ABAG to explain why the project's housing demand would not trigger a shift in demand outside the market area. As discussed in the NHPH Draft EIR, the vast majority of the current employees at UCSF live in a five-county study area, and new employees added to UCSF upon completion of the NHPH project would also be expected to reside in a similar manner. As stated on NHPH Draft EIR page 4.12-9, the housing demand associated with employment growth due to NHPH would be satisfied by the housing that is expected to be added in San Francisco and in other parts of the region. Between 2010 and 2030, San Francisco is expected to add about 91,695 new households, which would represent a 27 percent increase over its 2010 household levels. Assuming the current pattern of residential location preferences, the housing demand in San Francisco associated with UCSF employment growth from NHPH by 2030 would represent approximately 0.8 percent of the projected household growth — a share that is small and would not be anticipated to trigger shifts of demand to other parts of the study area or beyond the regional housing market area.

O-TL1-17 The commenter claims that the analysis of impacts on historic resources is inadequate and refers to the September 10, 2020 letter prepared by Brunzell Historical on the CPHP Draft EIR. The commenter states, as an example, that the Parnassus Heights campus site was not considered a historic resource or historic district in its own right with regards to the impacts analysis.

As previously discussed in the CPHP Final EIR, Volume 2, Comments and Responses, Carey & Co.'s 2011 Historic Resources Survey report for UCSF, on page 2, in the methodology section states, "Digital photographs were taken of

each structure visible from the public right-of-way, and the firm noted the overall environment and relationships of the buildings *to determine if the campuses contain potential historic districts*" [emphasis added]. In the Regulatory and Planning Framework section on page 4, the report states, "The regulatory background outlined below offers an overview of federal and state laws and regulations and the criteria used to assess the historic significance and eligibility of a building, structure, object, site, *or district* for listing in the National Register of Historic Places (NRHP) and in the California Register of Historical Resources (CRHR)." All of this indicates that Carey & Co. did consider the possibility of a historic district(s) at the Parnassus Heights campus site, and did not find sufficient evidence to identify an historic district.[2]

Also, as discussed in the CPHP Final EIR, Volume 2, Comments and Responses, the historic analysis in the CPHP Final EIR was based on the existing technical reports as well as the expertise of ESA's own architectural historians. In the process of preparing the CPHP EIR, ESA did consider whether or not the Parnassus Heights campus site should be considered a historic district, in which the individual buildings would have been considered as either contributing or non-contributing, rather than considering each of the buildings/structures/ landscapes as potentially significant individual resources. Given the wide range of architectural styles and uses of the buildings, the long period of development (1917-2010), and a lack over overall thematic context or initial master plan guiding development from the beginning, it was determined that the campus as a whole did not constitute a historic district. Therefore, the individual buildings evaluations were the best approach in determining potential significance.

Furthermore, as discussed in the NHPH Draft EIR, Section 4.4 *Cultural Resources* section, the only historical resource that could be impacted by the NHPH is the Reserve. However, the NHPH Draft EIR finds that the NHPH would not result in significant changes to the character-defining features of the Reserve. As such, the NHPH would have a less-than-significant impact on historical resources. Also see response to Comment O-TL1-18, below, as it relates to the treatment of the LPPI in the CPHP and NHPH EIRs.

O-TL1-18 The commenter claims that the NHPH Draft EIR piecemeals CEQA review of the CPHP and NHPH with respect to impacts on the historic significance of the LPPI building for the reasons cited in the comment letter on the NHPH Draft EIR prepared by Patrick Soluri on behalf of the Parnassus Neighborhood Coalition (Comment Letter O-SM in this Comments and Responses document).

The demolition of the LPPI was analyzed in the 2014 LRDP Final EIR; and the 2014 LRDP included the planned demolition of the LPPI. Additionally, after the

[2] The Carey & Co. survey did find a potential historic district along Third Avenue comprised of University-owned houses built in the Craftsman style in the 1910s. This portion of the campus site is located several blocks from the NHPH site.

certification of the 2014 LRDP Final EIR and prior to the CPHP EIR effort, the LPPI was determined to be individually eligible for the National Register and California Register. Therefore, the CPHP Final EIR addressed the potential effect of demolition of the LPPI on historic resources as part of the CPHP. The CPHP Final EIR determined the demolition of the LPPI to be a significant and unavoidable impact even after the implementation of CPHP Mitigation Measures CUL-1a, CUL-1b, and CUL-1c, and the Regents, in certifying the CPHP Final EIR, adopted a Statement of Overriding Considerations with respect to significant and unavoidable impacts, including impacts to historic resources, identified in the CPHP EIR.

Accordingly, the demolition and removal of LPPI was not included in the NHPH project and is being completed separately from the NHPH project. Nevertheless, the demolition of LPPI was considered in the cumulative context in Impact C-CUL-1 in the NHPH Draft EIR in Section 4.4, *Cultural Resources*. Impact C-CUL-1 acknowledged that, despite mitigation, the alteration or demolition of the LPPI and other historical resources on the campus site not associated with the NHPH would combine with known or reasonably foreseeable demolition or alteration projects on the campus site and its vicinity to result in cumulatively considerable impacts. However, implementation of the proposed NHPH would result in a contribution that would not be considerable to the previously identified significant cumulative impacts to historical resources. Therefore, impacts on historic architectural resources as a result of the implementation of the NHPH are considered less than significant.

The commenter is also referred to response to Comment O-SM-8, above, as it relates to responses to Comment Letter O-SM claims regarding piecemealing.

O-TL1-19 The commenter suggests that the cancer risk thresholds of the Bay Area Air Quality Management District (BAAQMD) applied in the analysis of health risks in the NHPH Draft EIR should be adjusted to reflect unique aspects of the environmental setting.

Under CEQA, lead agencies have discretion in determining the appropriate threshold of significance to determine the severity of a particular impact. “A threshold of significance is an identifiable, quantitative, qualitative, or performance level of a particular environmental effect, non-compliance with which means the effect will normally be determined to be significant by the agency and compliance with which means the effect normally will be determined to be less than significant.” (CEQA Guidelines, § 15064.7 subd. (a).) CEQA Guidelines further state, “When adopting or using thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence.” (CEQA Guidelines, § 15064.7 subd. (c.)).

As lead agency, the University of California has discretion to rely on BAAQMD's recommended thresholds of significance. Further, similar to other cities and counties that utilize BAAQMD CEQA guidance and thresholds, the University does not need to adopt these thresholds in a formal rule-making process. In consideration of State and federal air quality standards, and based on its own independent review of thresholds of significance for air quality impacts recommended by the BAAQMD, UCSF has determined that BAAQMD's recommended significance thresholds are appropriate to use to evaluate potentially significant air quality impacts associated with the proposed project. While others may disagree, such disagreement does not alter the fact that UCSF, and BAAQMD's expert conclusions developed in its 2009 document *Revised Draft Options and Justification Report, California Environmental Quality Act Thresholds of Significance* referenced in the NHPH Draft EIR (pages 4.2-22 to 4.2-25) constitute substantial evidence upon which UCSF may rely. (See *Center for Biological Diversity v. Department of Forestry & Fire Protection* (2014) 232 Cal.App.4th 931, 948 ["disagreement is insufficient… [a challenger must] *affirmatively show* there was no substantial evidence in the record…" (original emphasis)].) BAAQMD's 2009 Justification Report develops and considers a variety of air quality thresholds and recommends numeric significance criteria that BAAQMD staff believe provide a fair share of emission reductions from land use development.

Further, the project site is not located in a portion of the City of San Francisco that experiences poor air quality. As stated on page 4.2-9 of the NHPH Draft EIR, the Parnassus campus site is not located within an Air Pollution Exposure Zone, which are locations designated by the San Francisco Planning Department that experience poor air quality based on health-protective criteria. Therefore, there is nothing unique about the project site area that would warrant adjustments to BAAQMD-recommended health risk thresholds.

O-TL1-20 The comment raised concerns that the NHPH Draft EIR's description of the environmental baseline with respect to risks from diesel particulate matter is not current with respect to the date of the NHPH NOP.

The estimates of health risk exposure presented on page 4.2-10 of the NHPH Draft EIR are based on the latest available air toxic summary of the BAAQMD for the only BAAQMD monitoring station where TACs are monitored. These estimates are based on the concentrations of several TACs measured at the Arkansas Street station and are not reflective of the localized conditions of the Parnassus Heights campus site.

The health risk estimates provided on page 4.2-11 of the NHPH Draft EIR are based on data published by the California Air Resources Board (CARB). CARB has not updated these basin-wide health risk estimates from DPM since the

summary through year 2012 and, therefore, the background health risks related to DPM are, in fact, current through the NOP date.

However, CARB has published projected trends of DPM emissions for the San Francisco Bay Area Air Basin.[3] Based on the latest trends document, basin-wide emissions of DPM were predicted to decrease from 10 tons per day in 2000 to 2 tons per day in 2020, an 80 percent reduction. As stated on page 4.2-11 of the NHPH Draft EIR, as of 2000, the average Bay Area cancer risk from exposure to DPM based on a population-weighted average ambient DPM concentration was approximately 480 in one million. Consequently, one may expect that the current (2020) basin-wide risk solely from DPM to be on the order of 96 in one million. Other toxic air contaminant emissions within the basin will further contribute to this estimated risk. These basin-wide risks are also inclusive of transport emissions from outside the basin and are, therefore, very conservative.

With respect to a San Francisco-specific baseline, as stated on NHPH Draft EIR pages 4.2-8 to 4.2-9, the City and County of San Francisco partnered with the BAAQMD to inventory and assess air pollution exposure from vehicles, stationary sources, and area sources within San Francisco. Citywide dispersion modeling was conducted to assess the emissions from the following primary sources: vehicles on local roadways, permitted stationary sources, port and maritime sources, and diesel emissions from Caltrain. Modeling results were used to identify areas in the city with poor air quality, which are designated as the *Air Pollutant Exposure Zone* (APEZ). An APEZ is defined as a location where health risk exposures exceed 100 in one million. The methodology and technical documentation for modeling citywide air pollution are available in a recently updated document entitled *San Francisco Citywide Health Risk Assessment: Technical Support Documentation*. These most recent citywide modeling results indicate that the Parnassus Heights campus site and its surrounding area are not located within an APEZ, as stated on page 4.2-9 of the NHPH Draft EIR, and is therefore not located in a portion of San Francisco that is exposed to poor air quality conditions. Because this updated study was prepared in 2020, it is, in fact, representative of the conditions at the time of the NOP. Therefore, the commenter's contention that the NHPH Draft EIR's description of existing baseline health risks is not accurate.

O-TL1-21 The comment suggests that the project-level and cumulative health risk thresholds published by the BAAQMD and applied in the analysis of health risk in the NHPH Draft EIR are inappropriate because the existing baseline health risk is high.

[3] California Air Resources Board, *California Almanac of Emissions and Air Quality—2013 Edition*, 2013, Table 4-16. Available at https://ww2.arb.ca.gov/our-work/programs/resource-center/technical-assistance/air-quality-and-emissions-data/almanac-4.

As discussed above, in response to Comment O-TL1-20, most recent citywide modeling results indicate that the Parnassus Heights campus site and its surrounding area are not located within an APEZ and, therefore is located in an area of the City where the background health risk is less than 100 in one million. As stated on page 4.2-43 of the NHPH Draft EIR, as described by the BAAQMD, USEPA considers a cancer risk of 100 per one million or less to be within the "acceptable" range of cumulative cancer risk. Because the cumulative increase in cancer risk from all operational sources would be well below 100 in one million, the NHPH's cumulative impact to local health risk and hazards is appropriately identified as less than significant. Further, the impact assessment methodology and cumulative threshold set forth by the BAAQMD does not require the estimated risk from the cumulative projects to be added to the background risk to determine the significance of a project's cumulative impact. Rather, the threshold is an incremental risk threshold and is based on the reasoning (which is supported by scientific analysis) is that if a project's TAC emissions when combined with the TAC emissions from other existing and proposed sources within 1,000 feet of the project site produce a combined increase in cancer risk that is less than 100 in a million, such an increase will not substantially change the background risk levels in the study area, and the cumulative impact will be less than significant.

Similarly, the threshold set forth by the BAAQMD for project-level cancer risk impact is also an incremental risk threshold that is based on the reasoning (which is supported by scientific analysis) that if the increased cancer risk due to a project's TAC emissions is less than 10 in a million, the increase would not substantially change the background risk levels in the study area and the impact will be less than significant.

O-TL1-22 This comment suggests that the application of the BAAQMD's recommended project-level threshold of an increased cancer risk of 10 in one million and the cumulative threshold of an increased cancer risk of 100 in one million are inappropriate given the existing baseline risk levels and is not based on evidence.

Please see response to Comment O-TL1-20, above which explains the thresholds and approach to human health impact analysis put forth by the BAAQMD. BAAQMD methodology does not suggest or identify the need for adjusting its recommended project-level or cumulative health risk thresholds of significance based on existing background health risk and the analysis of the NHPH Draft EIR, appropriately, did not stray from the BAAQMD-recommended guidance.

O-TL1-23 The commenter opines that the Initial Study/Mitigated Negative Declaration is inadequate in evaluating the potential significant impacts of project actions on hydrology and water quality, and that the rationale for this opinion is based on the multiple findings presented in the commenter letter.

The commenter incorrectly refers to the NHPH Draft EIR as an Initial Study/Mitigated Negative Declaration. In any case, the commenter is referred to the individual responses to the comments that follow.

O-TL1-24 The commenter briefly summarizes aspects of the analysis in Section 4.9, Hydrology and Water Quality section in the NHPH Draft EIR, and cites specific excerpts in the section's approach to analysis and impact analysis subsections. The commenter concludes by stating that based on results of the Hydroconsult Engineers' December 3, 2021 report and the Arup November 1, 2021 and December 6, 2021 reports, the NHPH Draft EIR determined the project would not significantly impact hydrology and water quality and no mitigation is required.

The results of the reports that the commenter references were considered by UCSF along with the entire record of information referenced in the section when making conclusions regarding the significance of hydrologic and water quality impacts of the NHPH in the NHPH Draft EIR.

O-TL1-25 The commenter asserts that they are not able to evaluate the validity of the findings of no significant impact to hydrology and water quality, and expresses concerns about the interpretation of hydrology study results; and as a result, the commenter opines that the project may have significant adverse impacts on the water quality of receiving waters.

Please see responses that follow that address specific issues raised by the commenter regarding the validity of findings and interpretation of the hydrology study results.

O-TL1-26 The commenter asserts that the NHPH Draft EIR and Appendix HYD base their findings and conclusions on technical modeling reports that are not included in the NHPH Draft EIR and thus, the validity of findings cannot be evaluated. As indicated in response to Comment O-TL1-9, both sources of information were included in the administrative record compiled for the NHPH Draft EIR, and further, have been included as appendices in this Final EIR, as Appendix HYD-A and Appendix HYD-B, respectively.

The commenter indicates that the model findings refer to a single total volume of water discharged to the CSS, and inquires what are the corresponding volumes and flow rates of the stormwater and wastewater under baseline and project conditions. The commenter is referred to the Arup stormdrainage design report in Appendix HYD-A, and Appendix HYD-B, in this Final EIR for the methodology and approach used to estimate stormwater and wastewater from the project study area under baseline and with NHPH conditions. This analysis considers the proposed changes in land use, pipe network, wastewater flows in the project study area, as well as the proposed 150,000 gallons of on-campus stormwater storage.

Please note, however, that the analysis conducted by Hydroconsult Engineers in support of the NHPH Draft EIR (Appendix HYD in the NHPH Draft EIR) determined potential impacts that could result from the NHPH-related combined flows to the City's CSS system and receiving waters downstream of the proposed NHPH project site. The Hydroconsult Engineers' analysis evaluated whether the proposed NHPH, as designed, would meet the NHPH stormwater and wastewater performance standards established in the Draft EIR. As discussed in the NHPH Draft EIR, in the case of the first performance standard, conditions were modeled based on wastewater flows combined with runoff resulting from a 5-year, 3-hour storm; for the second performance standard, wastewater combined with runoff from a 100-year, 24-hour storm was analyzed; and for the third performance standard, wastewater combined with runoff from a typical year were analyzed. It is further noted that these performance standards are consistent with the requirements of the City's Stormwater Management Ordinance, and do not require consideration of changes in the ratio of wastewater vs. stormwater contributions. Please see also the additional responses that follow.

O-TL1-27 The commenter inquires how the analysis was completed by Arup to determine the size of detention basin storage required to detain peak flows and volumes generated by the project. Please see the Arup storm drainage design report in Appendix HYD-A in this Final EIR. An InfoWorks Integrated Catchment Modelling (ICM) hydraulic model was developed to study existing and future conditions of the NHPH study area for SFPUC 1- and 2-year 24-hour stormwater events. Several scenarios of the future model were developed, including with and without the proposed stormwater storage. The future model with no storage was used to determine the amount of storage required to match existing conditions. Results of the modeling indicate that a storage volume of 150,000 gallons would be required to detain stormwater on the campus site under NHPH conditions.

O-TL1-28 The commenter inquires if storage infrastructure creation would result in their own potential impacts to the environment. The commenter references the NHPH Draft EIR Project Description, which refers to repurposing of underground fuel diesel fuel tanks in Medical Center Way to provide storage for approximately 120,000 gallons of stormwater, and install a new underground tank at the Ammonia House site to store an additional 30,000 gallons of stormwater.

With respect to the preferred proposal to repurpose the existing 120,000-gallon capacity underground fuel diesel fuel tanks in Medical Center Way, no substantial new below grade construction would be required to repurpose these tanks. Rather, those tanks would be disinfected prior to repurposing them for use for stormwater storage, and stormwater collection infrastructure would be connected to the tanks. With respect to the potential installation of a 30,000-gallon capacity stormwater storage tank at the Ammonia House site, construction of this underground storage tank would be carried out in accordance with all applicable regulations and permits. Construction activities and related environmental effects associated with

installation of this tank are accounted for in the overall construction scenario analyzed in the NHPH Draft EIR, and as applicable, construction-related mitigation measures would be implemented for this component of the proposed project.

O-TL1-29 The commenter cites the Water Supply Evaluation (WSE) prepared by West Yost in support of the NHPH Draft EIR (Appendix WSE). However, the commenter appears to incorrectly interpret the water use for the NHPH as 199,140 gallons per day (gpd) in the WSE. Rather, WSE Appendix B table estimates the net increase in water use associated with the entire CPHP as 199,140 gpd, whereas the net increase in water use associated with the NHPH is estimated in the WSE as 57,960 gpd.

In any case, however, water demand in the WSE was estimated expressly for the purpose of evaluating potential effects of the NHPH on available water supplies. In contrast, in Arup's storm drainage design report (see Appendix HYD-A in this Comments and Responses document), Arup estimated baseline sewer flows at the site based on historical monthly water demand data adjusted at 90 percent return for the LPPI, and monitored sewer flow data for Moffitt and Long Hospitals. From this data, Arup derived a baseline per bed sewer flow rate, and then used this rate to estimate the wastewater generation for the New Hospital.

As such, the commenter's calculation of subtracting the wastewater generation estimate in the Arup storm drainage design report from the CPHP annual water demand estimate in the WSE to estimate stormwater is not appropriate or correct.

Lastly, with respect to the commenter's inquiry about net changes in stormwater flow, as explained in Section 4.9 in the NHPH Draft EIR, in addition to estimating the increase in wastewater from NHPH implementation, the storm drainage design report estimated the increases in stormwater that would result from NHPH implementation, and developed an estimate of the storage needed to detain peak flows and volumes so that the performance standards for the combined stormwater and wastewater flows established for the project would be met. The storm drainage design report used InfoWorks ICM 9.5 hydraulic modeling software to assess baseline and NHPH condition under several design storm events. The stormwater drainage study area included the NHPH site and the adjacent upstream area within the campus site that contributes storm flows through the NHPH site. Please see Appendix HYD-A in this Final EIR for additional detail.

O-TL1-30 The commenter inquires how the storage of stormwater in the proposed on-campus stormwater storage facility would affect the concentration of wastewater constituents that would be discharged to the CSS. The commenter is referred to response to Comment O-TL1-26. The Hydroconsult Engineers' analysis determined whether the proposed NHPH, as designed, would meet the NHPH

performance standards for the combined stormwater and wastewater flows established in the EIR, which are consistent with the requirements of the City's Stormwater Management Ordinance. These performance standards do not require consideration of changes in the concentration of wastewater constituents discharged to the CSS.

The commenter inquires how stormwater would be released from the proposed on-campus stormwater storage facility. The proposed stormwater storage system has not yet been designed. However, as discussed on NHPH Draft EIR, Chapter 3 Project Description page 3-29, the storage facilities would provide both retention and detention storage uses, with collected stormwater to be either pumped out into the CSS, and/or re-used for irrigation purposes on the campus site, as appropriate.

The commenter also inquires how the proposed emergency sewer tank is factored into the modeling of discharges to the CSS. As indicated on in Chapter 3, *Project Description*, page 3-29, and referenced in NHPH Draft EIR Appendix PD2, an emergency sewer tank is proposed to be located in the New Hospital basement. The emergency sewer tank is not related to, and would not connect to, the proposed stormwater storage tank. While the emergency sewer tank would connect to the City's CSS, any discharge of wastewater flows from this tank to the CSS would be infrequent, such as during maintenance, or during emergency conditions. Accordingly, it has not been included in the model to evaluate the effects of the combined stormwater and wastewater flows on the City's CSS.

O-TL1-31 The commenter indicates that answers to the commenter's inquiries are important to determine the relative changes in stormwater and wastewater concentrations being discharged to the CSS, treatment facilities and receiving waters. The commenter adds that the NHPH Draft EIR's findings cannot be validated without providing the technical studies that address this question and that the NHPH Draft EIR should be considered incomplete until the background information is provided.

As described in response to Comment O-TL1-9, above, Arup's December 2021 and November 2021 reports are included as appendices in this Final EIR as Appendix HYD-A and Appendix HYD-B, respectively. See also responses to Comments O-TL1-26 to O-TL1-30, above, which respond to specific issues raised by the commenter regarding various background information.

O-TL1-32 The commenter states the modeling results for the 5-year storm indicate that the total flow volume from the NHPH study area would increase from 0.210 million gallons (MG) under existing conditions to 0.213 MG with the NHPH project. The commenter then asserts these results indicate an increase in the volume of discharge to receiving waters and exceedance of the third performance standard listed in the EIR (related to discharges to receiving waters). The commenter further indicates that Appendix HYD and the NHPH Draft EIR consider that

because this is only a small increase, they aren't significant, but do not provide the rationale for this determination, even though the significance criteria is exceeded.

First, as discussed in the NHPH Draft EIR Section 4.9, *Hydrology and Water Quality*, and Appendix HYD, the results of the modeling of 5-year storm were used to evaluate impacts on the City's CSS pipes, pursuant to the first performance standard in the EIR. Based on the results in Appendix HYD, the NHPH Draft EIR, page 4.9-18 reports that there would not be a measurable increase in peak flows and there would only be a slight increase in total flows (3,000 gallons) immediately downstream of the NHPH project; but also, that there would not be a measurable increase in peak or total flows further downstream (i.e., downstream of the North Shore and Channel Basins). Given these results, the NHPH Draft EIR concluded that the NHPH project would not increase the likelihood of surcharges by exceeding the capacity of the pipes in the City's CSS, and accordingly, water quality effects related to overflows would be less than significant.

Secondly, however, the modeling results referenced by the commenter are those flows from the NHPH study area to the City's CSS, they are not the flows to the receiving waters. Rather, it is the analysis in the Draft EIR pursuant to the third performance standard that models the combined flows resulting from the typical year storm to estimate the increases in the frequency of combined sewer discharges (CSDs) to receiving waters. Based on the results in Appendix HYD (page 7), the NHPH Draft EIR, page 4.9-19 reports that the NHPH would not result in a measurable increase in the frequency of CSD events or CSD volumes at the study CSD outfall locations within the Channel and North Shore basins. The NHPH Draft EIR concluded that because stormwater and wastewater discharges from the NHPH would not affect the frequency or cause an increase in the volumes of CSDs, the impact of the NHPH related to changes in CSDs would be less than significant.

O-TL1-33 The commenter states that modeling summarized in Appendix HYD indicate that there is no increase in flood volume from the NHPH during the 100-year storm model simulation. The commenter then asserts that this result is counterintuitive given the increase in flood volume under the 5-year storm simulation. The commenter expects an increase in discharge volumes during a 100-year storm given the 5-year storm simulation results.

The results of the modeling of the 5-year storm to evaluate impacts on the City's CSS pipes are summarized in response to Comment O-TL1-32, above, and determined to be less than significant. That is, it would not result in manhole surcharges due to inadequate pipeline capacity.

The results of the modeling of 100-year storm were used to evaluate impacts related to flooding or ponding, pursuant to the second performance standard in the EIR. The modeling results presented in Appendix HYD show that due to the on-campus storm water storage included in the project, the NHPH would not measurably increase peak flows or total flows either immediately downstream of the NHPH project or downstream of the North Shore and Channel basins. Accordingly, the NHPH Draft EIR concluded that the NHPH project would not increase the extent or duration of downstream ponding or overland flows, and consequently, water quality effect related to downstream flooding or ponding would be less than significant.

In summary, the modeling results conducted in Appendix HYD and presented in the NHPH Draft EIR show no increase in flooding for either the 5 or 100-year simulations. In any case, flood volume refers to overflows from the CSS, not discharges to the receiving water. As discussed in response to Comment O-TL1-32, above, the appropriate modeling scenario to evaluate impacts related to increases in the frequency of CSDs to receiving waters is the typical year analysis, and that modeling demonstrated that because the combined stormwater and wastewater discharges from the NHPH would not increase the frequency or cause an increase in the volumes of CSDs, the impact of the NHPH related to changes in CSDs would be less than significant.

The commenter inquires about the availability of the Arup reports. As indicated in response to Comment O-TL1-31, above, Arup's December 2021 and November 2021 reports are included as appendices in this Final EIR, as Appendix HYD-A and Appendix HYD-B, respectively.

O-TL1-34 The commenter indicates that the model analysis used a typical year precipitation to calculate changes in the predicted frequency and volume of CSDs to receiving waters. The commenter inquires about the rationale for choosing a year of average annual frequency and volume of CSDs to evaluate impacts on receiving waters. The commenter opines that water quality exceedances to receiving waters occurs more frequently during wet years when there are higher rates and volumes of CSD, and modeling using typical year hydrology masks the adverse findings that would occur during a wet year. On this basis, the commenter asserts the NHPH Draft EIR should be considered incomplete until it evaluates impacts on receiving waters during above average wet water years.

Combined sewer systems transport both rainfall runoff and sanitary sewage. Wetter years which produce more rainfall runoff might produce more discharge, but not necessarily as there is storage, pumping, and treatment available (as described in the Environmental Setting in the NHPH Draft EIR *Hydrology and Water Quality* section. So a wetter than average year that includes longer, less intense storms may produce less discharge than a year with less total annual rainfall but more intense storms that the storage, pumping and treatment cannot

keep up with. Thus, the approach for considering all multiple scenarios is to analyze a long-term annual average that includes storms of various sizes. The "typical year" is a computation tool used to simulate a long-term annual average in a shorter period of model run time. It is not an actual year; it is synthesized to reflect long-term rainfall trends by combining storms of various sizes from the actual rainfall record. The results of the typical year runs are expected to be the same as running 30 years of actual rainfall.

Law Offices of
Thomas N. Lippe, APC

201 Mission Street
12th Floor
San Francisco, CA 94105

Telephone: 415-777-5604
Facsimile: 415-777-5606
Email: lippelaw@sonic.net

February 14, 2022

By Email: *EIR@ucsf.edu*
Ms Diane Wong
UCSF Real Estate - Campus Planning
654 Minnesota Street
San Francisco, CA 94143-0286

Re: New Hospital at Parnassus Heights Draft Environmental Impact Report: Comments on Water Quality, Population and Housing, Historic Resources, and Air Quality.

Dear Ms Wong:

This office represents San Franciscans for Balanced and Livable Communities (San Franciscans), a citizen's group composed of San Francisco residents.

I am submitting today, under separate cover, a comment letter on behalf of San Franciscans regarding the Draft Environmental Impact Report (DEIR) for the New Hospital at Parnassus Heights (NHPH) with respect to its analysis of project impacts on population and housing; water quality; historic resources; and air quality. 1

In connection with that letter, I attach hereto the following letters that San Franciscans previously submitted to UCSF regarding the Comprehensive Parnassus Heights Plan Environmental Impact Report ("CPHP EIR"): 2

- September 11, 2020, letter from Thomas Lippe to UCSF regarding the CPHP Draft EIR's analysis of impacts on beach water quality.
- September 11, 2020, letter from Thomas Lippe to UCSF regarding the CPHP Draft EIR's analysis of impacts on air quality.
- January 18, 2021, letter from Thomas Lippe to the Regents regarding the CPHP Draft CPHP Final EIR's analysis of impacts on air quality.

Thank you for your attention to this matter.

Very Truly Yours,

Tom Lippe

Thomas N. Lippe

C051 NHPH DEIR attachng CPHP letters.wpd

Responses to Comments from Law Offices of Thomas N. Lippe, APC

Please note that Comment Letter O-TL2 contained several exhibits. Exhibits 1 through 3 (including their sub-exhibits) in Comment Letter O-TL2 did not comment directly on the NHPH Draft EIR and no responses are required. These exhibits are included in Appendix O-TL2 in this Final EIR.

O-TL2-1 The commenter references a comment letter submitted under separate cover with respect to analysis of project impacts on population and housing, water quality, historic resources, and air quality.

The commenter is referencing Comment Letter O-TL1 which is included and responded to in this Comments and Responses document.

O-TL2-2 The commenter includes three letters that were previously submitted to UCSF, consisting of a September 11, 2020 comment letter on the CPHP Draft EIR's analysis of impacts of beach water quality; a September 11, 2020 comment letter on the CPHP Draft EIR's analysis of impacts on air quality; and a January 28, 2021 letter on the CPHP Final EIR's analysis of impacts on air quality.

The comment letters included by the commenter pertain specifically to the CPHP and the CPHP Draft and Final EIRs, and do not represent formal comments on the content and adequacy of, the NHPH Draft EIR. Nevertheless, please also see responses to Comments O-TL1-4 to O-TL1-9 as it relates to comments on beach water quality impact analysis in the NHPH Draft EIR; and responses to comments O-TL1-19 to O-TL1-22 as it relates to comments on the air quality impact analysis in the NHPH Draft EIR.

SOLURI MESERVE
a law corporation

tel: 916.455.7300 · fax: 916.244.7300
510 8th Street · Sacramento, CA 95814

February 14, 2022

SENT VIA EMAIL (EIR@ucsf.edu)

Diane Wong, Environmental Coordinator
UCSF Campus Planning
654 Minnesota Street
San Francisco, California 94143-0287

RE: Comments on the Draft Environmental Impact Report for the UCSF New Hospital at Parnassus Heights Project (State Clearinghouse No. 2021070547)

Dear Ms. Wong:

This letter, submitted on behalf of the Parnassus Neighborhood Coalition ("PNC"), provides comments on the Draft Environmental Impact Report ("DEIR") for the proposed UCSF New Hospital at Parnassus Heights ("NHPH").[1] The NHPH is identified as a major component, and certainly most environmentally impactful component, of the Comprehensive Parnassus Heights Plan ("CPHP") that was recently approved by the UC Regents ("UC") in January 2021. UC's release of a purportedly "stand-alone" EIR for the NHPH less than one year after UC's certification of the Comprehensive Parnassus Heights Plan EIR ("CPHP EIR") raises serious questions about UC's environmental review strategy. Our review of the DEIR suggests that its purpose is not to facilitate public disclosure of the CPHP's impacts, but rather to justify piecemealed review of the broader CPHP, which thwarts public disclosure of the CPHP's environmental impacts. 1

1. The DEIR Is Not a stand-alone EIR

The DEIR asserts: 2

> The NHPH EIR is ***a stand-alone project EIR, and does not "tier"*** from the CPHP Final EIR under the tiering provisions of CEQA (CEQA Guidelines Section 15152). As such, while the NHPH EIR draws from CPHP Final

[1] This letter also transmits expert comments by SWAPE (Exhibit 1), Shawn Smallwood, PhD (Exhibit 2), and Andrew Coleman, PhD (Exhibit 3), which are incorporated by reference.

> EIR for relevant background information and information about future development on the Parnassus Heights campus site under the CPHP where appropriate, it assesses all environmental topics required under CEQA ***without focusing out any issues or incorporating analyses in the CPHP by reference***, discloses all project and cumulative impacts, and identifies project-specific mitigation measures to reduce or avoid significant impacts.

(DEIR, p. 1-4, emphasis added.)

It is understandable that UC would prefer to limit the impact of legal infirmities in the CPHP EIR, which is riddled with fatal flaws and presently subject to judicial review, because a second-tier EIR must be set aside if a court vacates a first-tier EIR. (See *Friends of the Santa Clara River v. Castaic Lake Water Agency* (2002) 95 Cal.App.4th 1373.) UC cannot avoid this result, however, because the CPHP and NHPH are inextricably intertwined as a matter of fact, logic and law.

The DEIR's claim that it provides "stand alone" comprehensive analysis of the NHPH is demonstrably false. CEQA Guidelines section 15378, subdivision (a) clarifies, "'Project' means the whole of an action," and subdivision (c) further clarifies, "The term 'project' refers to the activity which is being approved and which may be subject to several discretionary approvals by government agencies. The term 'project' does not mean each separate approval." 2 cont.

The CPHP EIR's project description plainly stated, "The Plan includes an 'Initial Phase' that comprises: 1) Irving Street Arrival improvements, 2) Research and Academic Building (RAB), 3) New Hospital, and 4) initial Aldea Housing Densification, and as well as other Initial Phase improvements." (CPHP DEIR, p. 3-16.) What is more, the CPHP EIR explains that the NHPH requires the CPHP for its validity because the NHPH is inconsistent with the smaller hospital already approved by the UC as part of the 2014 LRDP. (CPHP DEIR, App. SNA, p. 2 ["UCSF will seek an amendment to the 2014 LRDP because implementation of the CPHP recommendations would require modification of the 2014 LRDP's Parnassus Heights development plan"]; see also CPHP DEIR, p. 1-7 ["UCSF has begun to plan the New Hospital at Parnassus Heights (NHPH or New Hospital) and is projecting the need for a larger hospital than was planned in the 2014 LRDP"].) There is no question that the NHPH relies on the validity of the CPHP. If the CPHP is set aside then the NHPH cannot move forward.

The inextricable relationship between the CPHP and NHPH is further demonstrated by declarations submitted by UC employees in connection with the pending litigation challenging the CPHP and its EIR. As just one example, Senior Associate Vice Chancellor Brian Newman declared under penalty of perjury:

> 10. The New Hospital, which was analyzed at a program-level in the CPHP EIR and which will be the subject of a project-specific EIR anticipated to be certified by the Regents in 2022, will be built on the site of the existing Langley Porter Psychiatric Institute ("LPPI"). Abatement of hazardous building materials and demolition of the interior of LPPI is scheduled to begin in the first quarter of 2022 and be completed in the summer of 2023. Exterior demolition of LPPI will be completed in the first three quarters of 2023. Early site work and OSHPD review of the New Hospital will commence in September 2023 and be completed in the summer of 2024. Construction of the New Hospital is scheduled to commence in summer of 2024 and be completed in 2029.
>
> 11. While abatement and demolition activities are conducted on UC Hall and LPPI, work will also be commencing on the Irving Street Arrival project and some of the Initial Phase Improvements.
>
> 12. If any of the actions implementing the CPHP Initial Phase projects described above is delayed, it will cause a chain reaction that leads to delays in other projects, and ultimately threaten UCSF's ability to comply with SB 1953 by 2030 and meet the currently unmet demand for patient beds as Parnassus Heights.

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(Exhibit 4, p. 5.)

Similarly, Kevin Beauchamp, Executive Director of UCSF Physical Planning, declared under penalty of perjury:

> 15. The two major nonresidential projects implementing the CPHP are the 870,000 gsf New Hospital and the 271,000 gsf RAB. Both are proposed to be developed on sites with extant buildings, UC Hall for the RAB and LPPI for the New Hospital. As the buildings to be demolished for these CPHP projects are very old, 1917 for UC Hall and 1941 for LPPI, actual hard demolition of these structures must be preceded by extensive abatement of hazardous materials and soft demolition, which is scheduled to take approximately 12 to 16 months. . . . Due to the dense development

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> pattern on the 46-acre portion of the Parnassus Heights campus site that is not dedicated to the Mount Sutro Reserve and to Parnassus Heights' location surrounded by residential development, it is essential that demolition and construction projects at Parnassus Heights are coordinated and synchronized to ensure that they can be completed on schedule and on budget. This is particularly so with the unmet need for state of the art research space at Parnassus Heights to support the clinical activities and with the need to complete and open the New Hospital by 2030 because of SB 1953.

4 cont.

(Exhibit 5, p. 7.)

These declarations establish unequivocally that the NHPH's "whole of the action" includes demolition of the LPPI. Despite this, the DEIR states, "[D]emolition and removal of these buildings are not included in the NHPH project and will be completed separately from the NHPH project." (DEIR, p. 3-4.) This is piecemealed CEQA review by entitlement, which is disallowed. (CEQA Guidelines, § 15378, subd. (c) ["The term 'project' refers to the activity which is being approved and which may be subject to several discretionary approvals by governmental agencies. The term 'project' does not mean each separate governmental approval"].) That the CPHP EIR purports to analyze the impact of demolition of LPPI on historic resources does not mean that demolition of the LPPI is now somehow a separate CEQA project from development of the NHPH. The same is true regarding other environmental resource impacts.

5

To avoid duplicating analysis, CEQA encourages agencies to use "tiering." "'Tiering' refers to using the analysis of general matters contained in a broader EIR (such as one prepared for a general plan or policy statement) with later EIRs and negative declaration on narrower projects; incorporating by reference the general discussions from the broader EIR; and concentrating the later EIR or negative declaration solely on the issues specific to the later project." (CEQA Guidelines, § 15152.) In an apparent attempt to insulate any flaws in the CPHP EIR, however, UC expressly disavows any tiering from the CPHP EIR. Notwithstanding this claim, the DEIR's discussion of water quality impacts reveals tiering from the CPHP EIR:

6

> This section assesses the potential for construction and operation of the New Hospital at Parnassus Heights (NHPH), including the related improvements, to result in significant impacts related to hydrology and water quality. In contrast to the program-level hydrology and water quality impact analysis previously conducted for the CPHP Final EIR, this section

> provides a project-level impact analysis of the proposed NHPH on those resources.

6 cont.

(DEIR, p. 4.9-1.)

Setting aside this inconsistency, there is no dispute that UC's claim to not rely on tiering necessarily means that the four corners of the DEIR must contain comprehensive analysis of the "whole of the action." The DEIR fails to comply with this requirement through its impermissibly truncated view of the scope of the NHPH as a CEQA project. As such, UC's attempt to have it both ways results in a fundamentally flawed EIR.

7

2. Review Is Impermissibly Piecemealed

a. The DEIR's Mischaracterization of the CPHP Development Program as a Cumulative Project Results in Piecemealed Review

The EIR has engaged in piecemealed CEQA review by mischaracterizing the CPHP development program, which includes the NHPH, as independent cumulative projects from the NHPH. This deprives the public of necessary project-level analysis.

The DEIR identifies cumulative projects as including "Implementation of the development program planned in the CPHP, including Initial Phase projects anticipated by Year 2030 [Irving Street Arrival, Research and Academic Building (RAB), initial phase of Aldea Housing densification, and Initial Phase Improvements]." (DEIR, p. 4.0-8.) The CPHP's planned development program, however, does not have independent utility from the NHPA. (*Del Mar Terrace Conservancy*, *Inc. v. City Council* (1992) 10 Cal.App.4th 712, 736.) The absence of independent utility is demonstrated with clarity in Mr. Newman's declaration, which explains:

> If any of the actions implementing the CPHP Initial Phase projects described above is delayed, it will cause a chain reaction that leads to delays in other projects, and ultimately threaten UCSF's ability to comply with SB 1953 by 2030 and meet the currently unmet demand for patient beds as Parnassus Heights.

8

(Exhibit 4, ¶ 12.)

This flawed strategy of segregating the CPHP from the balance of the CPHP's development program has the effect of minimizing project-level impacts. A few examples are provided below.

9

The CPHP EIR failed to quantify the NHPH's operational cancer risk to neighbors because UC claimed that inadequate project-level information was unavailable at that time. (CPHP DEIR, p. 4.2-23.) That project-level cancer-risk information is now available, yet the DEIR minimizes that risk by applying a cumulative threshold of 100 increased cancer risks rather than the project-level threshold of 10 increased cancers. (DEIR, pp. 4.2-42 – 43.) The DEIR concludes that the resulting cancer risk to neighbors would be less than significant even though the resulting cancer risk is well above BAAQMD's project-level significance standard of 10 increased cancer risks. 9 cont.

The DEIR engages in a similar sleight of hand regarding wind impacts. The CPHP EIR failed to include a project-level wind tunnel analysis for the CPHP development program — including the NHPH — because final building design was purported not complete. (CPHP FEIR, pp. 4.1-47, 4.1-49.) Although this design-level information is now available, the DEIR's project-level wind analysis is limited to the NHPH. (DEIR, pp. 4.1-46 – 50.) Analysis of the CPHP development program is relegated to a cumulative impact analysis. (DEIR, pp. 4.1-86 – 91.) Since it is well settled that a cumulative impact analysis may be less detailed than a project-level analysis, the DEIR's mischaracterization of the CPHP development program as a cumulative project deprives the public of a project-level wind tunnel analysis. (CEQA Guidelines, § 15130, subd. (b).) 10

The same flaw exists regarding the DEIR's analysis of hazardous materials. The declaration of Kevin Beauchamp explains that construction of the NHPH requires demolition of the LPPI, which involves "extensive abatement of hazardous materials and soft demolition" occurring over "12 to 16 months." (Exhibit 5, ¶ 15.) The EIR's discussion of whether this abatement work would "create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials" dismisses the impact altogether as having "no impact" because such demolition is a "separate planned project." (DEIR, p. 4.8-19.) While this "extensive abatement of hazardous materials" is admittedly necessary to demolish the LPPI in order to make way for the NHPH, and thus unquestionably within the "whole of the action," the DEIR makes no attempt to tier from the CPHP's analysis of this issue. (*Ibid*.) Instead, the DEIR relegates this activity to a cumulative project, and then dismisses the cumulative impact based on conclusory assumption that "any existing hazardous materials associated with those facilities and soils would be removed pursuant to applicable federal, State and local regulations." (DEIR, p. 4.8-30.) 11

In summary, the UC's flawed legal posture of characterizing the CPHP's development program as a separate cumulative project means that project-level impacts have not been adequately analyzed and disclosed. The DEIR fails to provide the 12

promised "stand-alone" project-level analysis of all aspect of the NHPH "whole of the action." 12 cont.

b. The DEIR's Truncated Project Description Thwarts Adequate Analysis of Impacts Related to the Ammonia House

The DEIR relies on its truncated scope of the NHPH to avoid necessary analysis of activities related to stormwater retention/detention. The DEIR provides:

> To avoid increases in peak CSS flows and volume that would occur with the NHPH (including the increased wastewater flows), the analysis in the storm drainage design report determined that approximately 150,000 gallons of on-campus stormwater storage capacity would be needed. The preferred proposal is to re-purpose the existing underground diesel fuel tanks in Medical Center Way to provide approximately 120,000 gallons of stormwater storage, and **install a new underground tank at the Ammonia House site to store an additional 30,000 gallons of stormwater**.

(DEIR, 4.9-18, bold added.) Additionally, the DEIR states:

> As discussed above, certain supporting utility improvements, including proposed electrical switchgear equipment and an underground stormwater storage tank, would be installed across Medical Center Way from the New Hospital **on the site of the former Ammonia House.**

13

(DEIR, p. 4.1-40, bold added.) Finally, the DEIR suggest that the site would also be a new electrical service entrance point, with metering and distribution switchgear. (DEIR, p. 3-29.)

Setting aside the DEIR's use of an inconsistent baseline (i.e. assuming removal of the Ammonia House tank), these discussions also simply assume without analysis that the current use of the Ammonia House would no longer be used for storage of ammonia. However, the DEIR fails to provide any discussion regarding the removal of the current ammonia tank. One must turn to the CPHP FEIR to understand the UC's plan regarding the ammonia tank. The CPHP FEIR states:

> UCSF currently maintains an 8,000-gallon ammonia tank in a small building located near the intersection of Parnassus Avenue and Medical Center Way. Under the CPHP, UCSF would remove and replace this tank

with an 10,000-gallon aqueous urea tank, to be located just south of the CUP.

(CPHP FEIR, p. 3-31.)

This cursory discussion lacks any analysis of potential impacts, which would perhaps be appropriate for a programmatic analysis that assumes a subsequent project-level review. However, the DEIR does not provide that programmatic review. The DEIR simply assumes the tank has been removed, but fails to provide additional discussion or analysis regarding its removal. For instance, the current tank is only 8,000-gallons. Is the site large enough to house a 30,000-gallon tank? Does the site contain contaminants that need to be remediated before a new tank is installed? The DEIR also fails to provide any information regarding aesthetics, lighting or glare. Instead, the DEIR makes conclusory statements that these impacts would be less than significant. (DEIR, p. 4.1-40 [NHPH would be consistent with 2014 LRDP scenic quality objectives]; DEIR, p. 4.1-44 [any new lighting at the Ammonia House are not anticipated to result in substantial light or glare impacts].) Last, the NHPH does not provide any information regarding the future storage of ammonia. The DEIR is simply not disclosing, much less analyzing, a significant component of the NHPH. These issues will need to be addressed in the Revised DEIR. 13 cont.

3. The DEIR's Analysis of Project Alternatives Is Arbitrary and Fails to Comply with CEQA

An EIR must describe a range of reasonable alternatives to the Project, or to the location of the Project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives. "An EIR's discussion of alternatives must contain analysis sufficient to allow informed decision making." (*Laurel Heights Improvement Assn. v. Regents of University of California* (1988) 47 Cal.3d 376, 404 (*Laurel Heights I*.) An EIR must also include "detail sufficient to enable those who did not participate in its preparation to understand and to consider meaningfully the issues raised by the proposed project." (*Id*. at 405.) 14

CEQA requires public agencies to avoid or reduce environmental damage when "feasible" by requiring "environmentally superior" alternatives and all feasible mitigation measures. (CEQA Guidelines, § 15002, subd. (a)(2) and (3); *see also*, *Berkeley Keep Jets Over the Bay Committee v. Board of Port Commissioners* (2001) 91 Cal.App.4th 1344, 1354 (*Berkeley Jets*); *Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal.3d 553, 564.) The EIR serves to provide agencies and the public with information about the

environmental impacts of a proposed project and to "identify ways that environmental damage can be avoided or significantly reduced." (CEQA Guidelines, § 15002, subd. (a)(2).) If the project will have a significant effect on the environment, the agency may approve the project only if it finds that it has "eliminated or substantially lessened all significant effects on the environment where feasible" and that any unavoidable significant effects on the environment are "acceptable due to overriding concerns." (Pub. Resources Code, § 21081; CEQA Guidelines, § 15092, subd. (b)(2)(A) & (B).) A "feasible" alternative is one that is capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social and technological factors. (Pub. Resources Code, § 21061.1; CEQA Guidelines, § 15364.)

14 cont.

Here, the DEIR: (i) fails to acknowledge Alternative 1B as the environmentally superior alternative; (ii) fails to approve the environmentally superior Alternative 1B; and (iii) fails to describe a reasonable range of alternatives including offsite alternatives.

a. Alternative 1B Is the Environmentally Superior Alternative

CEQA requires that lead agencies consider alternatives at two stages in the EIR process. First, a draft EIR must analyze a range of reasonable alternatives to the project. (CEQA Guidelines, § 15126.6.) Later, when the agency considers whether to approve or carry out the project as proposed, it cannot do so if a feasible alternative would substantially reduce significant effects. (CEQA Guidelines, § 15092, subd. (b)(2)(A).) To explore ways for a project to meet as many goals as possible while protecting the environment, EIRs thus must evaluate alternatives that accomplish "most" basic objectives. (CEQA Guidelines, § 15126.6, subd. (a); *Preservation Action Counsel v. San Jose* (2006) 141 Cal.App.4th 1336, 1353 (*Preservation Action*).) Alternatives warrant study in the EIR process if they can reduce or avoid impacts and are "potentially feasible." (CEQA Guidelines, § 15126.6, subds. (a), (c), (f); *Watsonville Pilots Assn. v. City of Watsonville* (2010) 183 Cal.App.4th 1059, 1087 (*Watsonville Pilots*).) As with the CPHP EIR[2], Alternative 1B was analyzed along with other project alternatives to identify the most environmentally superior alternative. (DEIR, Ch. 6.) The DEIR

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[2] The DEIR and CPHP EIR both include as Alternative 1B the new hospital consistent with the 2014 LRDP. The CPHP EIR states that Alternative 1B would provide a total of 439 inpatient beds. (CPHP DEIR, p. 6-14.) The DEIR states that Alternative 1B would provide only 431 beds. If the CPHP EIR's number is correct, then Alternative 1B would reduce hospital beds only by 36, not 44 as reported in the DEIR. The DEIR fails to explain this discrepancy regarding hospital plans that were approved back in 2014.

identified the no project alternative as the environmentally superior alternative and so, as required by CEQA, the DEIR purported to identify the next environmentally superior alternative that was not the no-project alternative.

Incredibly, however, the DEIR identified Alternative 2 as the environmentally superior alternative even though Alternative 1B clearly resulted in lesser environmental impacts. (DEIR, table 6-3.) Alternative 1B is predicted to have lesser impacts than Alternative 2 for 16 different identified impacts. (*Ibid*.) There is not a single impact where Alternative 2 is predicted to have a lesser impact than Alternative 1B.

Despite the DEIR's own analysis showing that Alternative 1B is predicted to have lesser impacts than Alternative 2, the DEIR asserts that Alternative 2 is the environmentally superior alternative. (DEIR, p. 6-48 – 49.) The DEIR bases this conclusion *not* on the comparative severity of environmental impact but rather on the DEIR's claim that Alternative 1B would not achieve all of the Project objectives. (*Ibid*.) As explained above, however, consideration of feasibility vis-à-vis project objectives is not relevant to selection of the environmental superior alternative. This point is demonstrated with clarity in the DEIR's selection of the no project alternative as the environmentally superior alternative. (DEIR, p. 6-39 ["From the alternatives evaluated in this EIR, the environmentally superior alternative would be the No Project – No Development Alternative"].) If consideration of project objectives were relevant in determining the environmentally superior alternative then the no project alternative – consisting of no hospital at all – could not possibly be the environmentally superior alternative over all other alternatives that include some variation of a new hospital. The DEIR *did not consider* project objectives in identifying the no project alternative as the environmentally superior alternative. Alternative 1B is clearly the next environmentally superior alternative to the no project alternative. The DEIR's internally inconsistent, and frankly absurd, reliance on project objectives to identify the *environmentally superior* alternative suggests that UC's true concern is to avoid the limited discretion associated with that designation.

15 cont.

b. Alternative 1B Is Feasible

Since Alternative 1B is the environmentally superior alternative, UC's discretion to reject it is significantly constrained. The lead agency is required to select the environmentally preferable alternative unless it is infeasible. As explained by our Supreme Court, an environmentally superior alternative may not be rejected simply because it is more expensive or less profitable:

16

> The fact that an alternative may be more expensive or less profitable is not sufficient to show that the alternative is financially infeasible. What is required is evidence that the additional costs or lost profitability are sufficiently severe as to render it impractical to proceed with the project.

(*Citizens of Goleta Valley v. Bd. of Supervisors* (1988) 197 Cal.App.3d 1167, 1180-81 (*Goleta I*); *see also*, *Burger v. County of Mendocino* (1975) 45 Cal.App.3d 322; *County of El Dorado v. Dept. of Transportation* (2005) 133 Cal.App.4th1376 (agency must consider small alternative to casino project); *Preservation Action*, *supra*, 141 Cal.App.4th at 1336.)

Further, an environmentally superior alternative may not be rejected because it does not meet all of the Project's objectives. Inconsistency with only some of the Project objectives is not necessarily an appropriate basis to eliminate impact-reducing project alternatives from analysis in an EIR. (CEQA Guidelines, § 15126.6, subds. (c), (f); *see also Watsonville Pilot*, *supra*, 183 Cal.App.4th at 1089.) 16 cont.

While the DEIR does not directly assert that Alternative 1B is infeasible (it would be improper to do so at this stage), the DEIR asserts that it would "not fully meet the key objectives for the NHPH." But as explained above, the standard for feasibility is not "fully" meeting project objectives. (*Watsonville Pilots*, *supra*, 183 Cal.App.4th at 1089 ["the purpose of an alternatives analysis is to allow the decisionmaker to determine whether there is an environmentally superior alternative that will meet most of the project's objectives"].)

Since the DEIR analysis is premised on the incorrect legal standard of "fully meeting" project objectives, the DEIR never actually determines whether Alternative 1B would meet "most" of the Project's objectives. It does. In fact, only two project objectives, both of which expressly require an "increase inpatient beds at Parnassus Heights," are not met by Alternative 1B.[3] (DEIR, p. 3-10.) Most legitimate objectives would be achieved. (*North Coast Rivers Alliance v. Kawamura* (2015) 243 Cal.App.4th 647, 669 [agencies may not manipulate project objectives in order to exclude otherwise feasible alternatives].)

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[3] Even these two objectives would be achieved by a slight modification to Alternative 1B. The DEIR states that an additional 49 inpatient beds would be provided as a result of renovations to Moffitt Hospital. (DEIR, p. 3-34.) The DEIR fails to explain why this renovation could not occur along with Alternative 1B. This is a reasonable partial alternative that would result in the same or more inpatient beds, and will need to be considered in the Revised DEIR.

The DEIR conclusively asserts, "The New Hospital proposed under this alternative would also not have sufficient space to meet modern regulatory requirements and industry standards of contemporary hospitals, such as construction codes, sized of operating rooms, ratio of operating rooms to pre- and post-recovery issues, and space for privacy and infection control issues." (DEIR, p. 6-18.) While the new hospital pursuant to Alternative 1B would admittedly provide fewer beds, the DEIR provides no support for these other specific claims. These unsubstantiated claims are particularly troublesome given UC seemingly found these standards satisfied just seven years earlier when it approved the 2014 LRDP. The DEIR fails to substantiate how these standards are so dramatically different from 2014.

16 cont.

The DEIR goes to great lengths to describe UCSF Health's predictions for increased demand for clinical services. (DEIR, p. 3-9.)[4] This discussion may help explain why UCSF Health desires additional physical space as a market participant in order to capture demand in competition with other providers of healthcare, but does not explain why USCF must capture *all* predicted demand for clinical service in order to remain a leading health science institution. Finally, the DEIR's discussion completely fails to explain why this additional space must be located at Parnassus Heights as opposed to the other medical center locations such as Mission Bay and Mount Zion.

At bottom, the DEIR's implied infeasibility argument is that changes in technology demand additional physical space — and that additional space can only be satisfied at the Parnassus campus. (DEIR, 6-18.) This is precisely where the DEIR's analysis breaks down when viewed in context. A similar argument for new space driven by changes in technology and applicable standards was previously raised by the UC in the context of its need to expand to Laurel Heights. In 1988, the Laurel Heights DEIR explained:

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> [C]hanges in research methods in the biomedical sciences have escalated the space needs of faculty members. For example, space intensive computerized equipment is now frequently used for examining molecular structures in order to design potential new drugs.

[4] DEIR obliquely refers to "observed shortages in the availability of beds, especially intensive care unit (ICU) and acute care beds." (DEIR, p. 3-9.) To the extent this is intended to suggest that San Francisco or the broader Bay Area are suffering from a shortage of ICU or acute care beds into the foreseeable future, the DEIR has failed to support this provocative claim.

> Additional space is essential both to recruit new faculty who are pioneering new techniques and to retain faculty who have created research programs that now need room for reasonable growth. Further, to capitalize on the new understandings and possibilities created by current research, additional faculty must be recruited in fields that have not previously existed. In 1980, for example, no one could have foreseen the explosion in both research and patient care in response to the AIDS epidemic.
>
> Adequate space must be developed to support academic programs and related faculty recruitments that cannot be predicted today, but are likely to flow from rapid advancesin molecular biology, genetics, and immunology. UCSF's leadership role in the biochemical sciences gives UCSF both the opportunity and the obligation to apply its expertise to advances in research and to the education of graduate students in the health science fields. With that obligation goes the need to marshal the necessary physical facilities to support those teaching and research activities.

17 cont.

(Exhibit 6, p. 20.)

UC's prior EIR for the Laurel Heights expansion asserted, as now, that UC required additional physical space in order to perform critical functions. Unlike now, however, UC argued that this need for additional space had to be satisfied *outside of the Parnassus campus*. (See Exhibit 6.) Indeed, UC vigorously argued that any expansion at Parnassus Heights was both infeasible and would result in significantly greater environmental impacts than expansion at an off-site location, stating in relevant part:

> The Parnassus alternative was discussed in the Draft EIR. See Regents' Op. Br. at 30. It was also discussed in greater detail in the Final EIR. *Id*. Both documents found, as did the Regents, that the Parnassus alternative would be infeasible. DEIR. 19-23, 67-70; FEIR. 735; Findings, A.15 at 491. If that were not enough, the Final EIR also found that the Parnassus alternative would result in greater adverse environmental impacts than the proposed project. FEIR 728-35 (greater adverse impacts relating to University plans and policies, land use and planning, parking, air quality, construction noise); in no respect was the Parnassus alternative superior to the proposed project.

(Exhibit 7, p. 18.)

In 2014, or 25 years later, UC reaffirmed the position, as memorialized in its approval of the 2014 LRDP, that UCSF could continue to meet its space needs through a combination of facilities at Parnassus Heights within the 3.55 million gsf development limitation — including a new Hospital — together with facilities located at its other campuses.[5] To be clear, UC's prior position was that any expansion at Parnassus was both infeasible and result in significantly greater environmental impacts than development at another campus. UC is now wholly reversing itself by claiming that any alternative other than significant expansion at Parnassus is infeasible. This complete reversal is not adequately explained on this record. The DEIR fails to describe the changes in healthcare technologies or standards have occurred so much more rapidly in the years following 2014 than over the 40 years prior. The only documented significant change in circumstances justifying UC's dramatic reversal is the unprecedented $500 million donation to UCSF.[6]

17 cont.

c. The DEIR Impermissibly Rejected Analysis of Any Off-Site Alternative

18

As with the CPHP EIR, the DEIR formulates but dismisses from analysis the off-site alternatives of building the new hospital at UCSF's Mission Bay or Mount Zion properties and completely ignores UC's property at Hunters Point. (DEIR, pp. 6-34 –

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[5] "The 2014 LRDP also is driven by the pursuit of compliance with the requirements of California's Alfred E. Alquist Hospital Facilities Seismic Safety Act of 1983 (Alquist Seismic Safety Act) and subsequent amendments, 12 the UC Seismic Safety Policy,13 the UC Sustainable Practices Policy,14 and the 1976 Regents' Resolution regarding the Parnassus Heights space ceiling, as well as numerous other state and local policies, codes, and plans. Also, with increased constraints on operating budgets, this LRDP strives to address UCSF's goal to improve operational efficiency through better utilization and consolidation of, and investment in, existing facilities. Further development at the Mission Bay campus site is secondary to these objectives, but serves as a mechanism to accomplish these goals while also providing opportunity for growth." (2014 LRDP, p. 17.)

[6] The DEIR is conspicuously silent as to the role played by the $500 million donation or resulting involvement in hospital planning by the Helen Diller Foundation. Documents that were improperly withheld by UC, and only recently produced by order of the Court, reveal that representatives of the Helen Diller Foundation were actively engaged by UCSF on such issues as whether to mitigate GHG emissions through project design features or carbon offsets (Exhibit 8), and even hospital design. (Exhibit 9.) (Pub. Resources Code, § 21082.1; CEQA Guidelines, § 15084, subd. (e); *California Clean Energy Committee v. City of Woodland* (2014) 225 Cal.App.4th 173, 194.)

37.) UC fails to comply with CEQA by refusing to analyze these off-site alternatives within the DEIR.

Since the DEIR's analysis of these alternative locations is the same as set forth in the CPHP EIR, the following comments on the CPHP EIR are incorporated by reference:

- Exhibit 10, letter dated September 11, 2020, from Lozeau Drury, pages 15 – 17.
- Exhibit 11, letter dated September 9, 2020, from Terrell Watt Planning Consultants, pages 21 – 24.
- Exhibit 12, letter dated January 18, 2021, from Lozeau Drury, pages 15 – 17.
- Exhibit 13, letter dated January 19, 2021, from Terrell Watt Planning Consultants, pages 5 – 6.
- Exhibit 14, Petitioners' Revised Opening Brief on the Merits, pages 66 – 72.
- Exhibit 15, Petitioners' Reply Brief on the Merits, pages 9 – 12.

18 cont.

i. *The Mission Bay Location*

The DEIR admits that the Mission Bay alternative would reduce the CPHP's significant wind impact in the vicinity of the new hospital, and also avoid a number of construction and operational impacts associated with the new hospital. (DEIR, p. 6-35.) The DEIR also finds that the Mission Bay alternative would result in "an estimated 291 fewer overall beds at Parnassus Heights campus site, and hence at UCSF campus-wide." (*Ibid*.) However, increasing beds "at Parnassus Heights" is an unduly and self-servingly narrow EIR objective, precluding adequate analysis of any off-site alternative. The DEIR fails to explain why the Mission Bay alternative could not be configured to increase available beds.

19

The DEIR also finds, without support or reasonable analysis, that the Mission Bay alternative would "conflict with several 2014 LRDP objectives for the Parnassus Heights campus site." (DEIR, p. 6-35.) The purported conflicts are unsupported to the point of absurdity, rendering the DEIR's analysis inadequate. The EIR fails to explain that the 2014 LRDP contemplated meeting the same objectives without the vast expansion proposed in the CPHP. Moving some new facilities to Mission Bay would not conflict with either the LRDP's objectives or fundamental EIR objectives for the NHPH. (DEIR, p. 3-10-11.)

The DEIR pronounces that "by not developing a New Hospital at the Parnassus Heights campus site, and focusing future new clinical uses at the Mission Bay campus site, this potential alternative would also result in decreased efficiency for UCSF staff and students." (DEIR, p. 6-35.) "Decreased efficiency" is subjective, is not a fundamental

objective á la *In re Bay-Delta* (2008) 43 Cal.4th 1143, and is a trumped-up reason not to analyze this alternative. Meeting all conceived objectives is not the standard at the EIR stage for an alternative that can reduce significant impacts. (*Watsonville Pilots*, *supra*, 183 Cal.App.4th at 1087.)

Citizens of Goleta Valley v. Board of Supervisors (1988) 197 Cal.App.3d 1167, 1179–80 (*Goleta I*) held that an EIR for a resort hotel should have considered an alternate site: "Reason requires that the agency charged with the duty to protect the environment compare impacts at feasible alternative locations." Off-site alternatives cannot be rejected for analysis because a project proponent does not want an off-site project, any more than a reduced-size project can be rejected for that reason. (*Uphold Our Heritage v. Town of Woodside* (2007) 147 Cal.App.4th 587, 602; *Preservation Action, supra*, 141 Cal.App.4th at 1355-56.) Otherwise, CEQA's requirement for consideration and analysis of off-site alternatives is meaningless.

19 cont.

The Yerba Buena Neighborhood Consortium submitted comments to the CPHP EIR explaining that Mission Bay could

> . . . fully accommodate expanded UCSF development of this scale and meet fundamental project objectives (*In re Bay-Delta* (2008) 43 Cal.4th 1143.) That of course is exactly what happened once before in 1996 with the decision to locate a new UCSF research campus in the already-approved Mission Bay Redevelopment Project.

(CPHP FEIR, p. 8.4.2.2-342.)

Mission Bay is a logical, beneficial site at which to achieve project benefits without significant impacts. "In fact, the Mission Bay Hospital was justified in part by the development cap at the Parnassus Campus." (CPHP FEIR, p. 8.4.2.2-19.) The claim of increased crosstown traffic is not supported by evidence or analysis. As further pointed out in comments to the CPHP EIR, "The now almost-finished Mission Bay Project has conclusively proved that a UCSF campus can be a catalyst project that makes master-planned projects like these financially feasible for development. In particular, associated bio-med commercial development remains potentially viable."

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ii. *The Mount Zion Location*

The Mount Zion alternative location, two miles from the Parnassus Heights project site, reduces or avoids the same significant environmental impacts as the Mission Bay location. It was rejected for EIR analysis for failing to meet the same non-fundamental

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project objectives and creating the same purported "inefficiencies." The DEIR objects to Mount Zion as "less than ideal." (DEIR, p. 6-37.) This is not a CEQA standard. (*Laurel Heights I*, *supra*, 47 Cal.3d at 400.) Like Mission Bay, locating the new hospital at Mount Zion would remove significant impacts at Parnassus and meet fundamental objectives. (UCSF CPHP CEQA Findings, pp. 75-76.)

21 cont.

iii. *The Hunters Point Location*

As with the CPHP EIR, the DEIR fails to mention the Hunters Point off-site alternative that commenters to the CPHP EIR urged for consideration. UC owns 3.8 acres in Hunters Point with two single-story buildings used for an animal care facility. (UCSF 2014 Final LRDP, p. 117.) The City submitted comments to the CPHP EIR that included a draft "Racial & Social Equity Initiative" planning approach referencing Bayview/Hunters Point. (CPHP FEIR, Appendix O-LD2, Attachments 3 and 4.) When the 2014 LRDP was published, San Francisco had approved the Candlestick-Hunters Point Shipyard Development Plan, an extensive mixed-use redevelopment plan that did not proceed. (*Ibid*.) As previously point out by planner Terry Watt in response to the CPHP EIR:

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> Feasible alternatives to the Project, improperly dismissed by the Final EIR, that would reduce or eliminate significant Project impacts should be reinstated for consideration including . . . No New Hospital at Parnassus Heights Campus Site and instead one of the following: Implement Phase 2 of Medical Center at Mission Bay Campus Site; New Hospital at Mount Zion Campus Site; . . . New Hospital at Hunters Point at the Candlestick site formerly slated for a new shopping mall. Locating the new hospital here would avoid many of the impacts associated with the Parnassus site, and would have many co-benefits such as providing jobs in and health services to an underserved and disadvantaged community.

(Exhibit 13, pp. 5-6.)

These same arguments apply with equal force to the DEIR. A revised DEIR is required to analyze and consider the above alternatives and to select the environmentally superior alternative unless it is truly infeasible.

4. The DEIR Applies an Inconsistent Baseline

23

Every CEQA document must start from a "baseline" assumption. The CEQA "baseline" is the set of environmental conditions against which to compare a project's

anticipated impacts. CEQA Guidelines section 15125, subdivision (a) states in pertinent part that a lead agency's environmental review under CEQA:

> ". . . must include a description of the physical environmental conditions in the vicinity of the project, as they exist at the time [environmental analysis] is commenced, from both a local and regional perspective. This environmental setting will normally constitute the baseline physical conditions by which a Lead Agency determines whether an impact is significant." (Emphasis added.)

23 cont.

(CEQA Guidelines, § 15125, subd. (a); see, *Save Our Peninsula Committee v. County of Monterey* (2001) 87 Cal.App.4th 99, 124-125.) Here, the DEIR plainly stated its baseline assumption: "While the NOP for the NHPH was published on July 29, 2021, the appropriate baseline condition for this EIR would be the same as that used in the CPHP Final EIR, which was January 2020." (DEIR, p. 4.0-6.) The DEIR's actual analysis of impacts, however, does not use this baseline. A few examples are provided:

The DEIR's Land Use section asserts that the NHPH is consistent with the Space cap, as it was amended by the Regents in 2021:

> The 1976 Regent's Resolution as amended in 2021 increased the space ceiling limit at the Parnassus Heights campus site from 3.55 million gsf to 5.05 million gsf, and the projected daily population estimate at the campus site was revised from approximately 18,500 in 2035 to approximately 25,300 persons by 2050.
>
> Under the proposed NHPH, the New Hospital would be 900,000 gsf, which is approximately 9 percent less than the 955,000 gsf included in the 2014 LRDP as amended by the CPHP. The proposed renovation of Moffitt and Long Hospitals would increase the net size of these two buildings (by 4,500 gsf for Moffitt Hospital, and up to 5,000 gsf for Long Hospital). The combined building space in the three hospitals under the proposed NHPH would be 1,668,900 gsf, which is approximately two percent less than the 1,709,400 gsf included in the 2014 LRDP as amended by the CPHP. Consequently, the building program at Parnassus Heights with the New Hospital and renovated Moffitt and Long Hospitals under the NHPH would be within the space ceiling limit set in the Regent's Resolution, as amended.

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(DEIR, p. 4.10-14.)

This is clearly inconsistent with the DEIR's earlier assertion that the baseline conditions are the same as the ones at the time of the CPHP. Further, this allows the DEIR to conclude that the New Hospital would be consistent with UC Plans and Policies, thus finding the land use impact less than significant. (DEIR, p. 4.10-14.) 24 cont.

Similarly, the DEIR's analysis of population and housing impacts relies on the 2021 MOU between UCSF and the City of San Francisco, which committed UCSF to deliver 1,263 new units by 2050, and half by 2030. (DEIR, p. 4.12-10.) "This would double UCSF's current housing portfolio citywide." (DEIR, p. 4.12-9.) Reliance on this information to determine significance is inconsistent with the DEIR's asserted baseline. 25

A third example is the DEIR's analysis of aesthetic impacts, which relies on a baseline that assumes approval of "Amendment #7 to the 2014 LRDP." (DEIR, p. 4.1-39.) However, Amendment #7 was approved on January 20, 2021, which is well after the DEIR's earlier claim that it would analyze impacts against a baseline date of January 2020." (DEIR, p. 4.0-6.) The DEIR improperly relies on this inconsistent baseline in order to find the impact is less than significant. 26

A final example is the DEIR's reliance on the removal of the current ammonia tank located at the Ammonia House. The DEIR finds Impact-HYD-1 to be less than significant. (DEIR, p. 4.9-20.) This determination is based on the conclusion that newly designed stormwater storage would allow the NHPH to avoid several flooding and discharge impacts. (*Ibid*.) However, the DEIR relies on an inaccurate baseline by assuming the current ammonia tank has been removed. 27

In sum, the DEIR relies on an unlawfully inconsistent baseline that appears designed to minimize environmental impacts in violation of CEQA. 28

5. The DEIR's Analysis and Mitigation of Noise Impacts Violates CEQA

a. The DEIR Fails to Adequately Connect Noise Levels with Human Health Impacts

The DEIR finds that Impact NOI-1 would be significant and unavoidable with mitigation. (DEIR, p. 4.11-16.) The DEIR finds that construction noise would exceed the standard of 80 dBA at 100 feet provided by San Francisco Police Code section 2909. (DEIR, p. 4.11-17.) The DEIR also finds that the 100 block of Edgewood Avenue would experience noise increases of more than 10 dBA, which would be a potentially significant impact. (DEIR, p. 4.11-18.) 29

CEQA requires an EIR to "identify and focus on the significant environmental effects of the proposed project . . . examin[ing] changes in the existing physical condition in the affected area," including "health and safety problems caused by the physical changes." (CEQA Guidelines, § 15126.2, subd. (a).) This section "also suggests that a connection be drawn between . . . potential project emissions and human health impacts. Such a connection would meet CEQA's requirements." (*Sierra Club v. County of Fresno* (2018) 6 Cal.5th 502, 520 (*County of Fresno*).) If it is not scientifically possible to determine potential human health impacts, "the EIR itself must explain why, in a manner reasonably calculated to inform the public of the scope of what is and is not yet known about the Project's impacts." (*Ibid*.) Although *County of Fresno* addressed the need to correlate air emissions to human health, *Sierra Watch v. County of Placer* (2021) 69 Cal.App.5th 86 recently applied similar analysis to the effects of noise emissions on human health.

Here, the DEIR acknowledges that noise emissions can result in human health impacts and provides the following information:

> The World Health Organization (WHO) is perhaps the best source of current knowledge regarding the health effects of noise impacts because European nations have continued to study noise and its health effects, while the United States Environmental Protection Agency (USEPA) all but eliminated its noise investigation and control program in the 1970s.[7] According to WHO, sleep disturbance can occur when continuous indoor noise levels exceed 30 dBA or when intermittent interior noise levels (such as from traffic) reach 45 dBA, particularly if background noise is low. With a bedroom window slightly open (a reduction from outside to inside of 15 dB), the WHO criteria suggest that exterior continuous (ambient) nighttime noise levels should be 45 dBA or below, and short-term events should not generate noise in excess of 60 dBA. WHO also notes that maintaining noise levels within the recommended levels during the first part of the night is believed to be effective for the ability of people to initially fall asleep (WHO, 1999).
>
> **Other potential health effects of high noise levels identified by WHO include decreased performance for complex cognitive tasks, such as reading, attention span, problem solving, and memorization; physiological effects such as hypertension and heart disease** (after many

29 cont.

[7] The *San Francisco General Plan* Land Use Compatibility Guidelines for Community Noise, presented below in Figure 4.11-2, were created during the same era.

> years of constant exposure, often of workers, to high noise levels); and hearing impairment (again, generally after long-term occupational exposure, although shorter-term exposure to very high noise levels, for example, exposure several times a year to concert noise at 100 dBA, can also damage hearing). Finally, noise can cause annoyance and can trigger emotional reactions like anger, depression, and anxiety. WHO reports that, during daytime hours, few people are seriously annoyed by activities with noise levels below 55 dBA or moderately annoyed with noise levels below 50 dBA.
>
> Vehicle traffic and continuous sources of machinery and mechanical noise contribute to ambient noise levels. Short-term noise sources, such as truck backup beepers, the crashing of material being loaded or unloaded, and car doors slamming contribute very little to 24-hour noise levels but are capable of causing sleep disturbance and annoyance. The importance of noise to receptors depends on both time and context. For example, long-term high noise levels from large traffic volumes can make conversation at a normal voice level difficult or impossible, while short-term peak noise levels, if they occur at night, can disturb sleep.

29 cont.

(DEIR, pp. 4.11-3 – 4, bold added.)

Though this information provides an overview, it fails to identify the "high noise levels" at which the "other potential health effects" may occur. (*Ibid.*) This omission makes it impossible to determine whether the Project's noise levels would create these "other potential health effects." (See Exhibit 14, pp. 35-36.) This is precisely the pitfall the California Supreme Court pointed out in *County of Fresno*. The *County of Fresno* court explained:

> The EIR's discussion of health impacts of the named pollutants provides only a general description of symptoms that are associated with exposure to the ozone, particulate matter (PM), carbon monoxide (CO), and nitrogen dioxide (NOx), and the discussion of health impacts regarding each type of pollutant is at most a few sentences of general information. The disclosures of the health effects related to PM, CO, and sulfur dioxide ***fail to indicate the concentrations at which such pollutants would trigger the identified symptoms***.

(*County of Fresno*, *supra*, 6 Cal.5th 502, 519, emphasis added.) The NHPH DEIR follows the same tract.

The DEIR estimates the duration of construction activities to be at least twelve years. (DEIR, p. 3.47.) Rather than describe how twelve years of consistent demolition and construction noise might impact the cognitive and emotional health of the surrounding area, the DEIR chose a more conclusory route. (DEIR, p. 4.11-22 – 23.) Without describing the levels at which cognitive and emotional health may be impacted, the DEIR concludes, "NHPH construction noise would not result in adverse health effects related to pain, the onset of hearing loss or other significant health impacts." (DEIR, p. 4.11 –23.) The DEIR reaches this conclusion because the noise levels "would not exceed 85 dBA, with the exception of occasional use of concrete saws, operation of individual pieces of construction equipment under the NHPH would be consistent with the City's Noise Ordinance restriction (noise level of 80 dBA Leq or less at a distance of 100 feet)[.]" (DEIR, p. 4.11-22.)

29 cont.

The DEIR fails to indicate the levels and durations (concentrations) that "would trigger the identified symptoms." (*County of Fresno*, *supra*, 6 Cal.5th at 519.) The *County of Fresno* court held that the failure to indicate the concentrations needed to trigger symptoms was a violation of CEQA due to its failure to properly inform the public. (*Id*. at 522.) The same is true here.

b. DEIR Fails to Adequately Analyze Nighttime Noise Impacts

In addition to the construction noise impacts, the NHPH's five cooling towers would increase ambient noise level to 63 dBA. (DEIR, pp. 4.11-23.) This is a 10 dBA increase above the existing 53 dBA nighttime noise levels. (*Ibid*.) This increase exceeds the City of San Francisco's noise ordinance, which prohibits commercial and industrial equipment from increasing the ambient noise level by 8 dBA. (DEIR, pp. 4.11-24.) Further, the DEIR finds that the interior noise levels would be raised to 48 dBA, which exceeds the City's 45 dBA standard for interior noise. (*Ibid*.) Due to these levels being exceeded, the DEIR finds that the noise from the cooling towers "would result in a potentially significant operational impact. NHPH Mitigation Measures NOI-2 is identified to reduce this impact to less than significant." (*Ibid*.)

30

MM-NOI-2 states:

> [G]iven the existing monitored nighttime noise level at the nearest property line of 53 dBA, cooling towers shall be selected, designed, or enclosed to achieve an exterior performance standard of 61 dBA or less at the nearest property line. Achievement of this exterior standard would be sufficient to also achieve an interior nighttime standard of 45 dBA.

(DEIR, p. 4.11-24.)[8] Thus, the mitigation measure intends to reduce the increase in ambient noise to exactly 8 dBA, the maximum allowed by the City's noise ordinance. (*Ibid*.) Further, this mitigation assumes that the residents in question would or even could close their windows and doors at night, which raises a question of enforceability and effectiveness. An impact analysis cannot conclude that mitigation would reduce the impact to less than significant if the mitigation measure relies on the actions of third parties. (CEQA Guidelines, § 15126.4, subd. (a)(2) ["Mitigation measures must be fully enforceable through permit conditions, agreements, or other legally binding instruments."].)

Since an EIR cannot simply assume that people will always keep their windows closed every night, the DEIR must address the potential health impacts resulting from its own prediction that people will be forced to sleep with ambient noise at 61 dB. (*Protect the Historic Amador Waterways v. Amador Water Agency* (2004) 116 Cal.App.4th 1099, 1108 (*Amador Waterways*) ["an established regulatory standard could not be applied in a way that would foreclose the consideration of other substantial evidence showing that there might be a significant environmental effect from a project"].) The DEIR's failure to address this issue is prejudicial given the WHO's criteria, which "suggest that exterior continuous (ambient) nighttime noise levels should be 45 dBA or below, and short-term events should not generate noise in excess of 60 dBA." (DEIR, pp. 4.11-3 – 4; DEIR, p.4.11-1 ["sleep disturbance can occur at noise levels above 35 dBA."].) The DEIR fails to correlate these increased levels of ambient noise with sleep disturbance and other potential health impacts, or explain why such a correlation is infeasible.

30 cont.

c. Mitigation Measures NOI-1b is Unenforceable and Deferred Mitigation

CEQA Guidelines allow deferred mitigation in some instances. (CEQA Guidelines, § 15126.4, subd. (a)(1)(B).) However, if an agency chooses to defer formulation of mitigation, it must "(1) commits itself to the mitigation, (2) adopts specific performance standards the mitigation will achieve, and (3) identifies the type(s) of potential action(s) that can feasibly achieve that performance standard." (*Ibid*.) The NHPH DEIR's Mitigation Measure NOI-1b is identical to the CPHP's FEIR Mitigation Measures NOI-1b. CPHP's NOI-1b is unenforceable and impermissibly deferred, the same is true here.

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[8] The DEIR fails to explain how the mitigation measure provides an exterior decrease of 2 dBA, but an interior decrease of 3 dBA.

> Mitigation Measures NOI-1b states:
>
> Construction hours *shall be restricted* to the hours listed in the table below. In rare circumstances, *work may need to occur* outside of these work hour limits. In such cases, UCSF Community and Government Relations will receive advance notice from the project manager, at least one week in advance as feasible, and will engage the community to identify measures to minimize potential impacts. These measures may include, but not be limited to, restricting work to smaller time windows, condensing the overall duration of nighttime work to the degree feasible, and erecting temporary barriers to shield the short-term nighttime activity.

(DEIR, p. 4.11-21, italics added.) The mitigation measure defines timeframes for construction in the first sentence and completely disregards those timeframes in the next. Therefore, NOI-1b does not actually impose time restrictions for construction. Rather, construction could occur at any hour of any day, as long as, UCSF Community and Government Relations provide notice, "as feasible." (DEIR, p. 4.11-21.) Due to the lack of enforcement, the DEIR cannot rely on mitigation measure NOI-1b to limit construction to daytime hours. (DEIR, p. 4.11-22 ["Because construction would be restricted by NHPH Mitigation Measure NOI-1b to only occur during daytime hours, health effects associated with the potential for nighttime awakenings would be avoided."].)

31 cont.

Additionally, the DEIR provides various measures that "may" be imposed to "minimize potential impacts." (DEIR, p. 4.11-21.) First, the use of the word *may* produces an optional mitigation measure. Second, the measures that may be utilized include, "restricting work to smaller time windows, condensing the overall duration of nighttime work to the degree feasible, and erecting temporary barriers to shield the short-term nighttime activity." (*Ibid*.) This language is devoid of performance standards and fails to provide any noise limits to after-hours construction.

Mitigation measures NOI-1b fails to restrict construction to daytime hours and fails to provide performance standards that would protect the health of the surrounding neighbors. The result is a mitigation measure that fails to meet CEQA requirements of enforceability and is deferred mitigation. The Recirculated EIR must include performance standards and enforceability mechanisms to address the above-mentioned deficiencies.

6. The DEIR Fails to Disclose and Mitigate the Project's GHG Emissions

Expert comments addressing the DEIR's analysis of greenhouse gas emissions ("GHG") have been prepared by SWAPE, which are attached as Exhibit 1 and incorporated by reference. Additional comments are provided below. 32

a. The DEIR fails as an informational document regarding GHG emissions

CEQA requires EIRs to provide adequate information to inform the public and decision makers. Specifically:

> An EIR is an informational document which will inform public agency decision makers and the public generally of the significant environmental effect of a project, identify possible ways to minimize the significant effects, and describe reasonable alternatives to the project. The public agency shall consider the information in the EIR along with other information which may be presented to the agency.

(CEQA Guidelines, § 15121.) The DEIR's GHG emissions information fails to meet this standard. 33

As a preliminary matter, the DEIR fails to provide detailed information regarding the ability to adequately purchase offsets. MM-GHG-1 appears to rely on two forms of offsets. (DEIR, pp. 4.7-39 – 40.) One, the CARB-regulated cap-and-trade program. (DEIR, pp. 4.7-39.) Two, voluntary carbon credit offsets. (DEIR, pp. 4.7-39 – 40.) However, the DEIR fails to provide information regarding the amounts each program would use or whether those amounts are available.

For example, the DEIR states, UCSF is a covered entity under the cap-and-trade program. (DEIR, p. 4.7-38.) The cap-and-trade program only allows eight percent of a covered entity's compliance obligation be met using AB 32 compliant offsets. (DEIR, pp. 4.7-16 – 17.) The DEIR fails to explain whether the calculations provided in Table 4.7-3 reflect an eight percent decrease and, if so, fails to indicate where the eight percent reduction occurred. For example, is the eight percent reduction to mobile emissions, natural gas combustion, solid waste, or something else? (DEIR, p. 4.7-36.) The DEIR also fails to describe whether annual emissions of 27,449 MT CO_2e accounts for the cap-and-trade reduction of eight percent. This makes a difference because the next page states that the NHPH would offset 27,449 MT CO_2e per year. (DEIR, p. 4.7-37.)

Without accurate information the DEIR fails to provide decision-makers and the public with the opportunity to evaluate the Project's impacts or efficacy of proposed mitigation. (*Washoe Meadows v. Dept. of Parks and Rec*. (2017) 17 Cal.App.5th 277, 285 ["Informed public participation is essential to environmental review under CEQA."]; *Inyo v. City of L.A.* (1977) 71 Cal.App.3d 185, 192-193 ["Only through accurate view of the project may affected outsiders and public decision-makers balance the proposal's benefit against its environmental costs"].)

33 cont.

b. The DEIR's Relies on Unenforceable GHG Mitigation

GHG-1 violates CEQA because it is unenforceable mitigation. CEQA requires a lead agency to consider several factors when determining the significance of GHG impacts. (CEQA Guidelines, § 15064.4, subd. (b).) These factors include:

> (1) The extent to which the project may increase or reduce greenhouse gas emissions as compared to the existing environmental setting.
>
> (2) Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.
>
> (3) The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions (see, e.g., section 15183.5(b)). Such requirements must be adopted by the relevant public agency through a public review process and must reduce or mitigate the project's incremental contribution of greenhouse gas emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project. In determining the significance of impacts, the lead agency may consider a project's consistency with the State's long-term climate goals or strategies, provided that substantial evidence supports the agency's analysis of how those goals or strategies address the project's incremental contribution to climate change and its conclusion that the project's incremental contribution is not cumulatively considerable.

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(*Ibid*.)

The DEIR determined that "the NHPH would result in a significant impact on the environment if GHG emissions from its construction and operations would exceed a threshold of zero net additional GHG emissions compared to the existing GHG emissions at Parnassus Heights campus site, estimated to be 127,083 MT CO_2e." (DEIR, p. 4.7-34.) The DEIR finds this impact would be significant because the NHPH would increase GHG emissions by 27,449 MT CO_2e annually. (DEIR, p. 4.7-36.) In order to decrease the impact to less than significant, the DEIR relies solely on Mitigation Measure GHG-1 (GHG-1). (*Ibid*.)

GHG-1 is divided into several parts, "Continued Compliance with CARB's Cap and Trade Program," "Compliance with UC Policy – Offsets for Emissions from Commuters and Air Travel," "Compliance with UC Policy – Carbon Neutrality" and "Commitment to control Parnassus Height Annual Emissions to not exceed existing baseline." (DEIR, pp. 4.7-39 – 40.) However, these four parts can be broken down to two, compliance with CARB's cap-and-trade program and compliance with UC policy. The main distinction between the two is that CARB-covered entities may offset up to 8 percent of its covered emissions with AB 32 approved offsets. (DEIR, p. 4.7-16.) Cap-and-trade program is described as follows:

> Up to eight percent of a covered entity's compliance obligation can be met using carbon offset credits, which are created through the development of projects, such as renewable energy generation or carbon sequestration projects, that achieve a reduction of emissions or an increase in the removal of carbon from the atmosphere from activities not otherwise regulated, covered under the cap, or resulting from government incentives. Offsets are verified reductions of emissions whose ownership can be transferred to others. As required by AB 32, any reduction of GHG emissions used for compliance purposes must be real, permanent, quantifiable, verifiable, enforceable, and additional. ***Offsets used to meet regulatory requirements must be quantified according to CARB-adopted methodologies, and CARB must adopt a regulation to verify and enforce the reductions.*** The criteria developed will ensure that the reductions are quantified accurately and are not double-counted within the system (CARB, 2008).

(DEIR, pp. 4.7-16 – 17, emphasis added.)

34 cont.

UC policy, on the other hand, allows an infinite amount of offsets to be bought through a voluntary offset market (DEIR, pp. 4.7-39 – 40). This is not the same as the cap-and-trade market.

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The voluntary offset market is not required to meet the same stringent enforceability standards as those established in CARB's cap-and-trade program. (See Cal. Code Regs., tit. 17, § 95802, subd. (a).) For example, CARB requires offset credits must be "real, permanent, additional quantifiable, verifiable, and enforceable," as described by California regulations. (DEIR, p. 4.7-39.) The voluntary markets do not require these regulatory standards be met. Instead, the DEIR states "The protocols of each registry, and UC [sic] own internal screens, shall be used to demonstrate that the carbon offset credits provided are real, permanent, additional, and have been independently verified as adhering to its applicable project protocols." (DEIR, p. 4.7-40.)

35 cont.

This shortcoming is similar to the one described in *Golden Door*. In *Golden Door*, as here, the agency's proposed offsets did not meet the protocols of the CARB cap-and-trade program designed to ensure that they are "real, permanent, verifiable, additional, and enforceable." (*Golden Door Properties, LLC. v. County of San Diego* (2020) 50 Cal.App.5th 467, 511 (*Golden Door*).) Further, the language used in GHG-1 is nearly identical to language used as the mitigation in *Golden Door*. The court in *Golden Door* held:

> Unlike M-GHG-1, under cap-and-trade, it is not enough that the registry be CARB-approved. Equally important, the protocol itself must be CARB-approved. (Cal. Code Regs., tit. 17, § 95970, subd. (a)(1) & (2).)[26] *This distinction is significant because some offset protocols administered by CARB-approved registries are not Assem. Bill No. 32 compliant.* Indeed, CARB has stated that offset protocols developed by CARB-approved registries (including registries named in M-GHG-1) do *not by that fact alone* meet the offset criteria in Assem. Bill No. 32:
>
> "Voluntary offset programs such as the American Carbon Registry, Climate Action Reserve, Verified Carbon Standard, and others may submit protocols to [C]ARB for review. However, regardless of how the voluntary protocols are developed, [C]ARB staff must determine whether the voluntary protocol should be developed for use in the Cap-and-Trade Program and if so, to conduct its own rulemaking process under the Administrative Procedure Act. . . . *This process ensures that any voluntary protocol . . . demonstrates the resulting reductions meet the offset criteria in [Assem. Bill No. 32]*.
>
> "Protocols developed by the voluntary programs are not Compliance Offset Protocols as they are not developed through a rulemaking process, *may not*

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> *meet the [Assem. Bill No. 32] and Cap-and-Trade Regulation criteria*, and were not approved by [CARB]." (Italics added.)
>
> Furthermore, before approving a protocol, CARB subjects the proposed offset protocol to public notice, a comment period, and a public hearing. (Cal. Code Regs., tit. 17, §§ 95970, subd. (a)(2), 95971, subd. (a).) CARB also requires that emission reductions for offset credit be from sources not already covered by cap-and-trade. For example, CARB would not approve an offset protocol for installing solar panels because electricity generation is already covered under cap-and-trade.
>
> The CARB Protocols are the heart of cap-and-trade offsets—but the word "protocol" is not even mentioned in M-GHG-1. Contrary to the County's contention, M-GHG-1 is not equivalent to cap-and-trade offset programs because M-GHG-1 does not require the protocol itself to be consistent with CARB requirements under title 17, section 95972, subdivision (a)(1)-(9) of the California Code of Regulations, quoted *ante.* For example, CARB will not approve a protocol unless its GHG reductions are permanent. (*Id.*, § 95970, subd. (a)(1).) If the project is to sequester carbon (e.g., planting trees), the protocol must ensure that the GHG will not be released for 100 years. M-GHG-1 is deficient because it has no such safeguards.

36 cont.

(*Golden Door*, *supra*, 50 Cal.App.5th at 511-512.)

The DEIR relies on UC's internal screens, therefore, it is unclear whether the protocols the UC may choose to utilize are consistent with CARB requirements. Without this information the DEIR cannot rely on GHG-1 as mitigation because it is unenforceable.

37

c. GHG-1 Is Impermissibly Deferred Mitigation

In addition to being unenforceable, the court in *Golden Door* found the GHG mitigation used in that case to be deferred. This finding was based in part because the County's planning director determined whether to approve the voluntary offsets, without applying an objective criteria. (*Golden Door*, *supra*, 50 Cal.App.5th at 519.) Similarly, the DEIR relies on "internal guidelines" and "internal screens" that must be satisfied. (DEIR, pp. 4.7-39 – 40.) The result is the same. The DEIR fails to provide information regarding the "internal screens," who is responsible for defining them, or whether the screens would meet CARB offset standards.

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An additional problem with the deferral of this mitigation is whether offsets would be available. The DEIR states, "local (within the air district) and in-state carbon offset credits shall be prioritized over in-nation offset credits. If sufficient local and in-state offset credits are not available, UCSF will purchase CARB conforming national offset credits registered with an approved registry." (DEIR, p. 4.7-40.) Nothing in this discussion indicates an adequate availability of offsets for the New Hospital. An email obtained through litigation illuminates this potential shortcoming. Jackie Safier of the Helen Diller Foundation discussing a Berkeley project, "If in Berkeley we decide to apply come January or February 20202 [sic], we would need to buy the credits then. Issue with there being a supply available given the A's purchases and pricing." (Exhibit 8.)

38 cont.

Therefore, two deferral issues exist within GHG-1. First, the public and decision-makers have not been provided the information needed to determined what "internal screens" or "internal guidelines" would be used to determine the efficacy of the voluntary mitigation offsets. Second, the DEIR fails to provide information regarding the availability of voluntary offsets. As noted in Exhibit 8 other projects are concerned over the availability of voluntary offsets. These deficiencies result in impermissibly deferred mitigation.

d. Construction and Operation of the NHPH Would Conflict with State Policy

Operation of the NHPH would result in a net increase of emissions of 27,449 MT CO_2e annually. (DEIR, p. 4.7-36.) This is problematic because California policy is to significantly reduce GHG emissions.

Specifically, the state's policy is to reduce state-wide greenhouse gas emissions to 1990 levels by the year 2020 (Health and Saf. Code, § 38550), 40 percent below 1990 levels by the 2030 (Health and Saf. Code, § 38566), 80 percent below 1990 levels by 2050 (Executive Order S-3-05). (*Cleveland National Forest Foundation v. San Diego Assn. of Governments* (2017) 3 Cal.5th 497 ["These targets were based on a scientific consensus that climate change was largely caused by human activity resulting in elevated levels of carbon dioxide and other heat-trapping gases in the atmosphere and that drastic reductions in greenhouse gas emissions were required to stabilize the climate"].) Although the CEQA Guideline Appendix G significance threshold asks whether a project would "conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases," these straightforward and applicable standards are not used in the DEIR for assessing the Project's impact on GHG emissions. Rather, the DEIR explains that its "approach to analysis" of GHG impacts is to analyze

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consistency with CARB's 2017 Scoping Plan Update ("Scoping Plan"). (DEIR, p. 4.7-34.)

The use of the 2017 Scoping Plan in lieu of State policies creates a loophole. Rather than reduce GHG emissions pursuant to Health and Safety Code sections 38550 and 38566, the DEIR's approach is to reach "net zero" emissions. (DEIR, p. 4.7-34.) However, net zero and emissions reductions are not the same. Therefore, Impact GHG-2 should be significant because it conflicts with State policy that was adopted to reduce emissions.

Further, the 2017 Scoping Plan is not intended to be used by the UC. The DEIR quotes the 2017 Scoping Plan, the language quotes is derived from the Scoping Plan section titled "Climate Action through Local Planning and Permitting." That section explains:

> To support local governments in their efforts to reduce GHG emissions, the following guidance is provided. This guidance should be used in coordination with OPR's General Plan Guidelines guidance in Chapter 8, Climate Change. While this guidance is provided out of the recognition that local policy makers are critical in reducing the carbon footprint of ***cities and counties***, the decision to follow this guidance is voluntary and should not be interpreted as a directive or mandate to local governments.

(Scoping Plan, p. 99, emphasis added.)

On its face, the Scoping Plan's language is inapplicable to UCSF because it is neither a city or county. The DEIR fails to provide any explanation regarding its reliance on the 2017 Scoping Plan or how it is applicable to a state-wide institution such as the UC. In fact, the DEIR states, "UCSF is constitutionally exempt from local land use regulations whenever using property under its control in furtherance of its educational purposes." (DEIR, p. 4.7-32.) Therefore, the Scoping Plan's section providing guidance to cities and counties regarding private development in their jurisdictions simply does not apply to the UC.

The DEIR use of the 2017 Scoping Plan, which is patently inapplicable to use in the analysis, results in a legal error. Further, this error is prejudicial because using a "net zero" significance standard reduces UC's mitigation obligation as compared to using a significance standard tied to the state's 2030 and 2050 GHG reduction goals.

39 cont.

e. The DEIR Fails to Include a Discussion of Other Feasible GHG Mitigation Strategies

An EIR must provide feasible mitigation that could minimize significant impacts. (CEQA Guidelines, § 15126.4, subd. (a)(1).) "Where several measures are available to mitigate an impact, each should be discussed and the basis for selecting a particular measure should be identified." (*Id*. at subd. (a)(1)(B).) In *Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692, the court discusses infeasibility of mitigation and alternatives. There the court states, "Even though the agency ultimately finds mitigation measures adequate or proposed alternatives infeasible, the EIR must still contain a meaningful discussion of both alternatives and mitigation measures." (*Id*. at 731.) The court goes on to clarify, "An environmentally superior alternative cannot be deemed infeasible absent evidence the additional costs or lost profits are so severe the project would become impractical." (*Id*. at 736.)

The DEIR fails to provide this information. As discussed above, the DEIR relies solely on purchasing offsets to reduce the GHG emissions impact to less than significant. (DEIR 4.7-36.) However, there are other mechanisms for lowering emissions resulting from the construction and operation of the NHPH. The SWAPE report provides other feasible mitigation measures: 40

> As demonstrated above, the DEIR fails to implement any additional mitigation measures to reduce localized GHG emissions, and instead proposes the use of carbon offsets to maintain carbon neutrality. Thus, as the DEIR fails to define an exceedance limit, Project-generated GHG emissions may considerably exceed the campus site year 2019 baseline. UCSF's intended use of only carbon offsets to maintain carbon neutrality is irresponsible and careless…Furthermore, review of correspondence between UCSF staff dated August 19, 2020 to August 20, 2020 demonstrates that a cost benefit analysis indicated that carbon offsets are cheaper than project design or engineering features intended to actually reduce emissions. [(See Attachment A.)] By concluding a less-than-significant GHG impact after relying solely on carbon offset mitigation, it appears that UCSF prioritizes cost rather than environmental protection. We find this to be in direct contradiction with CEQA's intent to prevent or minimize damage to the highest extent possible. As such, to reduce the Project's GHG impacts to the maximum extent possible, we recommend additional feasible mitigation measures be incorporated, such as those suggested in the section of this letter titled "Feasible Mitigation Measures Available to Reduce Emissions." As a result, we recommend the Project

> not be approved until an updated EIR is prepared and incorporates all feasible mitigation, including specifically project design and engineering features, to reduce localized Project-generated GHG emissions.

(Exhibit 1, pp. 16-17.)

The SWAPE report goes on to provides a list of feasible mitigation derived from SCAG's *2020 RTP/SCS*. (Exhibit 1, pp. 17-22.) An internal UC email string only recently produced by court order suggests that the DEIR does not need to analyze whether the NHPH could be engineered to lower emissions. (Exhibit 8.) The email states:

> We did analyze the cost of meeting the greenhouse gas requirements of SB 995 on our Berkeley project with Ramboll. Sharing this as it applies to UCSF if going this route. Here is what we found preliminarily as it applies to our project in Berkeley.
>
> - Basically our 300 million project, we need 32,000 tons – to buy carbon credits it would cost about $300K. To engineer it into the project would be $20 million (***so buying the offsets is the route to go***)
> - Issue is A's need 531K tons (so 15 times more than us) so about $4.8 million in carbon offset credits to purchase.
> - If in Berkeley we decide to apply come January or February 20202 [sic], we would need to buy the credits then. Issue with there being a supply available given the A's purchases and pricing.

(Exhibit 8, emphasis added.)

The DEIR fails to consider other feasible alternatives to lower GHG emission impacts. (See Exhibit 1, pp. 15-16.) Additionally, the DEIR fails to provide a cost analysis showing that the additional cost to engineer GHG emissions reductions into the project are so extensive the project would become "impractical." The Recirculated DEIR must contain this information.

40 cont.

7. The DEIR Piecemeals TAC Emissions and Thereby Fails to Disclose Cancer Risks To Neighbors

41

CEQA requires an EIR to consider all phases of a project when evaluating a project's impacts on the environment. (CEQA Guidelines, § 15126.) Assessing impacts

of the project, the lead agency shall identify direct and indirect effects of the project, "giving due consideration to both the short-term and long-term effects." (CEQA Guidelines, § 15126.2, subd. (a).) Direct physical changes in the environment include construction and operations related to the project. (CEQA Guidelines, § 15064, subd. (d)(1).) Further, "An EIR should be prepared with a sufficient degree of analysis to provide decision makers with information which enables them to make a decision which intelligently takes account of environmental consequences." (CEQA Guidelines, § 15151.) Here, the DEIR fails as an informational document because it fails to disclose the human health risk resulting from the total toxic air contaminants ("TAC") emitted by the NHPH's construction and operation. This omission creates misinformation for both decision makers and the public regarding the NHPH's TAC impacts.

The SWAPE Report states:

> The Office of Environmental Health Hazard Assessment ("OEHHA"), the organization responsible for providing guidance on conducting HRAs in California, released its most recent *Risk Assessment Guidelines: Guidance Manual for Preparation of Health Risk Assessments* in February 2015.[9] According to OEHHA guidance, "the excess cancer risk is calculated separately for each age grouping and then summed to yield cancer risk at the receptor location."[10] Here, the DEIR includes two HRAs evaluating the health risk impacts to nearby, existing receptors as a result of Project construction and operation, but violates OEHHA guidance by failing to evaluate the combined lifetime cancer risk as a result of Project construction and operation together. Thus, the DEIR's HRAs fail to sum each age bin to evaluate the total cancer risk over the course of the Project's total construction and operation. This is incorrect and, as such, an updated analysis should quantify the entirety of the Project's construction and operational health risks and then sum them to compare to the BAAQMD threshold of 10 in one million, as referenced by the DEIR (p. 4.2-33).

(Exhibit 1, p. 11.)

41 cont.

[9] "Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessments." OEHHA, February 2015, *available at:* https://oehha.ca.gov/air/crnr/notice-adoption-air-toxics-hot-spots-program-guidance-manual-preparation-health-risk-0.

[10] "Guidance Manual for preparation of Health Risk Assessments." OEHHA, February 2015, *available at:* https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf p. 8-4

The DEIR does not combine the figures. Instead, the DEIR creates two separate impacts (AIR-3 and AIR-4), which are identical, other than one measuring construction TAC emissions and the other measuring operation TAC emissions. (DEIR, pp. 4.2-30 and 4.2-34.) The DEIR concludes the mitigated cancer risk stemming from construction would be 5.6, less than the significance threshold of 10. (DEIR, p. 4.2-32.) Therefore, Impact AIR-3 is less than significant after mitigation. (*Ibid*.) The DEIR concludes cancer risk from operations would be 8.6, less than the significance threshold of 10. (DEIR, p. 4.2-34.) Therefore, Impact AIR-4 is less than significant. (*Ibid*.) Thus, the DEIR has framed the analysis in a manner that allows the DEIR to conclude there would not be a significant impact. This is inaccurate, misleading and not a good faith disclosure of environmental impacts. (*Laurel Heights I*, *supra*, 47 Cal.3d at 392 ["If CEQA is scrupulously followed, the public will know the basis on which its responsible officials either approve or reject environmentally significant action, and the public, being duly informed, can respond accordingly to action with which it disagrees."].)

41 cont.

A Recirculated DEIR must be prepared that accurately discloses the CPHP's cancer risk to neighbors or, failing that, the NHPH's total cancer risk to neighbors.

8. The DEIR's Finding of a Less Than Significant Impact Ground Shaking Is Not Supported By Substantial Evidence

The DEIR's section addressing Geology and Soils was reviewed by expert geologist Andrew Jay Coleman, Ph.D. Mr. Coleman's letter is attached as Exhibit 3, and incorporated by reference. Dr. Coleman explains that it is not possible to adequately determine whether the NHPH will have a significant impact on nearby properties due to direct or indirect earth shaking without use of a microseismic array.

42

9. The DEIR Fails as an Informational Document Regarding Bird Strike Impacts

The DEIR's analysis of impacts to biological resources, including with particularly the NHPH's significant bird strike hazard, was reviewed by expert biologist Shawn Smallwood, Ph.D. Dr. Smallwood's comments are attached as Exhibit 2, and incorporated by this reference. Dr. Smallwood has identified numerous shortcomings in the DEIR's formulation of baseline conditions, analysis of NHPH impacts, and formulation of mitigation measures for biological impacts.

43

10. The DEIR's Conclusion of Less Than Significant Visual Impacts Is Based on Legal Error

The DEIR acknowledges that "the introduction of the New Hospital would . . . contrast sharply both in height and scale with the nearby residential development." (DEIR, p. 4.10-21.) This sharp contrast in height and scale is precisely the type of visual impact that does not even require expert testimony to establish. (*Pocket Protectors v. City of Sacramento* (2004) 124 Cal.App.4th 903; *Georgetown Preservation Society v. County of El Dorado* (2018) 30 Cal.App.5th 358.)[11] Despite this, the DEIR concludes that the NHPH's impact would be less than significant without the need for any mitigation. (DEIR, p. 4.1-39 -40.)

The DEIR does not even attempt to offer a factual dispute that the NHPH would "contrast sharply" with the surrounding areas and violate San Francisco's zoning standards. Instead, the DIER's conclusion is based on purely legal arguments that: (i) "the building would be consistent with the 2014 LRDP as amended," and (ii) "would not conflict with applicable zoning and other regulations governing scenic quality." Neither of these legal arguments has merit, and certainly does not overcome the factual support for significant visual and aesthetic impacts resulting from the NHPH's sharply contrasting size and bulk. 44

As explained above, the DEIR's first legal argument is without merit because the argument conflicts with the DEIR's own assertion of a January 2020 baseline. An agency may not rely on an internally inconsistent baseline simply to avoid disclosing a significant impact.

The DEIR's second legal argument is similarly without merit. Even if San Francisco's zoning standards are "inapplicable" as the DEIR asserts, this may not be used to foreclose consideration of substantial evidence supporting a fair argument of significant impact. (*Amador Waterways*, *supra*, 116 Cal.App.4th at 1108 – 09.) That said, the record does not establish that San Francisco's zoning restrictions are "inapplicable" to the NHPH. The DEIR asserts, "Pursuant to the University of California's constitutional autonomy, development and uses on property under the

[11] While expert testimony is not required to support a significant aesthetic impact, such evidence has been previously submitted as is incorporated by reference. (Exhibits 11, 13, 16.) While these comments were submitted before the "design" of the NHPH was released, these comments remain relevant because they are based on the size and scale of the NHPH, which are largely unchanged. (Compare CPHP EIR, p. 3-26 [294 ft high and 955,000 gsf] and DEIR, p. 3-13 [294 ft high and 900,000 gsf].)

control of the University that are in ***furtherance of the University's educational purposes*** are not subject to local land use regulation." (DEIR, p. 4.1-31.) As discussed more fully in section 3.b. above, the DEIR makes clear that its need for additional physical space is driven primarily by the need for UCSF Heath to provide more beds for anticipated demand for its clinical services as a healthcare provider. (DEIR, p. 3-9.) However, UCSF Health is just one of UCSF's three enterprises; the other two are "UCSF's education enterprise" and "UCSF's research enterprise." While the three enterprises are "inter-dependent," the DEIR fails to explain how many additional hospital beds are necessary to maintain that inter-dependance and UC's status as "one of the country's leading health sciences campuses." Presumably the answer is "zero," since that status has already been achieved without the additional hundreds of new beds now being proposed. Thus, the additional contemplated beds are not in furtherance "of the University's educational purposes," but rather in furtherance of UC Health's goal of capturing demand in competition with other providers in the healthcare market.

44 cont.

11. <u>Analysis and Mitigation of Wind Impacts are Improperly Deferred</u>

The DEIR acknowledges that the NHPH would result in significant wind impacts. (4.1-55, 4.1-101.) Labeling an impact "significant" does not allow an agency to avoid disclosing the severity of the acknowledged significant impact. (*Berkeley Jets*, *supra*, 91 Cal.App.4th 1344, 1371.) As explained above, the UC's legal posturing means that a project-level analysis has not been performed for the NHPH along with the other elements of the CPHP. The CPHP EIR justified UC's failure to prepare that wind-tunnel analysis by claiming there was no design available for the NHPH at that time. Incredibly, the DEIR is now suggesting exactly the opposite, namely that design-level information is available only for the NHPH. The DEIR's proposed wind mitigation provides:

45

> **NHPH Mitigation Measure C-AES-3: Design new cumulative buildings to minimize wind impacts at pedestrian level.**
>
> Prior to the approval of the design of individual cumulative buildings, which will be developed pursuant to the CPHP, for which one or more building facades would have a height of 80 feet or more, UCSF shall engage a qualified wind consultant to conduct wind tunnel testing of the proposed building(s) to determine whether the building(s) would result in new exceedance(s) of the City of San Francisco's pedestrian wind hazard criterion. The wind tunnel testing shall be conducted for the building(s) under consideration in the context of then-existing conditions as well as in the context of conditions representative of then-anticipated CPHP buildout (the buildout scenario in this EIR, as may be modified from time to time by

> UCSF to reflect actual building designs known at the time) so as to determine whether the individual building(s) and/or the buildout condition would result in exceedances of the wind hazard criterion.
>
> If the wind tunnel analysis determines that the building(s)' design or buildout conditions would increase the hours of wind hazard exceedance or the number of test points subject to hazardous winds, compared to then-existing conditions, UCSF shall work with the wind consultant to identify feasible mitigation strategies, including design changes (e.g., setbacks, rounded/chamfered building corners, stepped facades, etc.), to eliminate or reduce wind hazards to the maximum feasible extent. If UCSF finds that these changes or other wind speed reduction strategies are not feasible as they would unduly restrict the proposed building's space program, result in operational inefficiencies, and/or substantially higher costs, the building(s) may nonetheless be approved provided that the project incorporates wind speed reduction strategies to the maximum feasible extent, as determined by UCSF in consultation with the wind consultant. Wind speed reduction strategies could also include features such as landscaping, localized installation of porous/solid screens, installation of canopies along building frontages, and the like.

45 cont.

(DEIR, p. 4.1-100 – 101.)

This mitigation measure assumes that designs for RAB, Irving Street Arrival and Aldea Housing Densification are not yet available, and yet the CPHP EIR previously asserted exactly the opposite, explaining in relevant part:

> **Approach to Analysis of Initial Phase Projects, including New Hospital, and Initial Phase Improvements**
>
> This EIR includes project-level analysis for certain Initial Phase projects anticipated to be completed by about the year 2030; specifically, the Irving Street Arrival, Research and Academic Building (RAB), and initial Aldea Housing Densification; and Initial Phase improvements, as described below. The New Hospital is also an Initial Phase project anticipated to be completed by about the year 2030, ***but is analyzed at a program level in this EIR within the context of the overall CPHP and will be analyzed at a project level in a subsequent EIR when more details are available***.

(CPHP EIR, p. 4.1-23.)

In other words, the CPHP EIR asserted that sufficient detail was available about all CPHP "Initial Phase" projects except the New Hospital, and now the DEIR claims exactly the opposite is true. This shell game is inexcusable. The DEIR cannot defer analysis and mitigation of admittedly significant wind impacts by falsely claiming building designs are not available. A Revised DEIR will need to include a detailed and comprehensive project-level wind tunnel analysis that discloses wind impacts and imposes all feasible mitigation. 45 cont.

* * *

For the foregoing reasons, PNC believes that the DEIR for NHPH is wholly inadequate and urges the UC to prepare a Revised DEIR to address the concerns raised herein. Thank you for considering our comments.

Very truly yours,

SOLURI MESERVE
A Law Corporation

By: Patrick M. Soluri

PS/mre

Attachments:

Exhibit 1 Expert Comments from SWAPE
Exhibit 2 Expert Comments from Shawn Smallwood, PhD
Exhibit 3 Expert Comments from Andrew Coleman, PhD
Exhibit 4 Declaration of Brian Newman in Opposition to Parnassus Neighborhood Coalition, Calvin Welch and Yerba Buena Neighborhood Coalition's Motions for Preliminary Injunction, filed on September 2, 2021, in Alameda County Superior Court, Case No. RG21088939 [Related Case Nos. RG21089332 and RG21090517]

Exhibit 5	Declaration of Kevin Beauchamp in Opposition to Parnassus Neighborhood Coalition, Calvin Welch and Yerba Buena Neighborhood Coalition's Motions for Preliminary Injunction, filed on September 2, 2021, in Alameda County Superior Court, Case No. RG21088939 [Related Case Nos. RG21089332 and RG21090517]
Exhibit 6	Excerpt from the 1989 University of California - Laurel Heights Draft Environmental Impact Report
Exhibit 7	Regents of the University of California, Respondent's Reply Brief, Supreme Court No. S027252, Court of Appeal Nos. A052852 and A052853
Exhibit 8	August 19 and 20, 2020 email correspondence between Jackie Safier, Brian Newman and other UC staff.
Exhibit 9	March 23, 2019 email correspondence between UC staff regarding CPHP building design
Exhibit 10	September 11, 2020 letter re: Comment on Draft Environmental Impact Report, UCSF Comprehensive Parnassus Heights Plan (SCH 2020010175) submitted by Richard Drury
Exhibit 11	September 9, 2020 letter re: Comments on Draft Environmental Impact Report for Proposed UCSF Comprehensive Parnassus Heights Plan submitted by Terrell Watt Planning Consultants
Exhibit 12	January 18, 2021 letter re: Comment on Final Environmental Impact Report, UCSF Comprehensive Parnassus Heights Plan (SCH 2020010175) submitted by Richard Drury
Exhibit 13	January 19, 2021 letter re: Comments on Final Environmental Impact Report for Proposed UCSF Comprehensive Parnassus Heights Plan submitted by Terrell Watt Planning Consultants
Exhibit 14	Parnassus Heights Coalition, Petitioners' Revised Opening Brief on the Merits, filed November 5, 2021, in Alameda County Superior Court Case No. RG21088939 [Related Case Nos. RG21089332 and RG21090517]
Exhibit 15	Parnassus Heights Coalition, Petitioners' Reply Brief on the Merits, filed December 30, 2021, in Alameda County Superior Court Case No. RG21088939 [Related Case Nos. RG21089332 and RG21090517]
Exhibit 16	September 8, 2020 letter re: Comments on Draft Environmental Impact Report for Proposed UCSF Comprehensive Parnassus Heights Plan submitted by Jared M. Ikeda

EXHIBIT 1

SWAPE Technical Consultation, Data Analysis and Litigation Support for the Environment

2656 29th Street, Suite 201
Santa Monica, CA 90405

Matt Hagemann, P.G, C.Hg.
(949) 887-9013
mhagemann@swape.com

Paul E. Rosenfeld, PhD
(310) 795-2335
prosenfeld@swape.com

February 14, 2022

Patrick M. Soluri
Soluri Meserve
510 8th Street
Sacramento, CA 95814

Subject: **Comments on the UCSF New Hospital at Parnassus Heights Project (SCH No. 2021070547)**

Dear Mr. Soluri,

We have reviewed the December 2021 Draft Environmental Impact Report ("DEIR") for the UCSF New Hospital at Parnassus Heights Project ("Project") located in the City of San Francisco ("City"). The Project proposes to construct a 900,000-square feet ("SF") hospital and related improvements as part of the 1,668,900-SF New Hospital at Parnassus Heights Project ("NHPH"). 46

Our review concludes that the DEIR fails to adequately evaluate the Project's hazards and hazardous materials, air quality, health risk, and greenhouse gas impacts. As a result, emissions and health risk impacts associated with construction and operation of the proposed Project are underestimated and inadequately addressed. An updated EIR should be prepared to adequately assess and mitigate the potential hazards and hazardous materials, air quality, health risk, and greenhouse gas impacts that the project may have on the surrounding environment. 47

Hazards and Hazardous Materials

Inadequate Analysis and Disclosure of Impacts

A Phase I Environmental Site Assessment ("ESA") was not prepared for the Project site. The preparation of a Phase I ESA is routinely undertaken in the preparation of CEQA documents to identify and disclose hazardous waste issues that may present impacts to the public, workers, or the environment, and which may require further investigation, including environmental sampling and cleanup. 48

Standards for performing a Phase I ESA have been established by the US EPA and the American Society for Testing and Materials Standards ("ASTM").[1] Phase I ESAs are conducted to identify conditions that would indicate a release of hazardous substances and include:

- a review of all known sites in the vicinity of the subject property that are on regulatory agency databases undergoing assessment or cleanup activities;
- an inspection;
- interviews with people knowledgeable about the property; and
- recommendations for further actions to address potential hazards.

Phase I ESAs conclude with the identification of any "recognized environmental conditions" ("RECs") and recommendations to address such conditions. A REC is the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property. If RECs are identified, then a Phase II ESA generally follows, which includes the collection of soil, soil vapor and groundwater samples, as necessary, to identify the extent of contamination and the need for cleanup to reduce exposure potential to the public.

A Phase I ESA, completed by a licensed environmental professional, is necessary for inclusion in a revised EIR to identify and disclose recognized environmental conditions, if any, at the proposed Project site. If past land uses have resulted in RECs, a Phase II should be conducted to sample for residual concentrations of contaminants in soil. Any contamination that is identified above regulatory screening levels, including California Department of Toxic Substances Control Soil Screening Levels[2], should be further evaluated and cleaned up, if necessary, in coordination with the Regional Water Quality Control Board and the California Department of Toxic Substances Control.

48 cont.

Air Quality

Unsubstantiated Input Parameters Used to Estimate Project Emissions

The DEIR's air quality analysis relies on emissions calculated with CalEEMod.2020.4.0 (p. 4.2-22).[3] CalEEMod provides recommended default values based on site-specific information, such as land use type, meteorological data, total lot acreage, project type and typical equipment associated with project type. If more specific project information is known, the user can change the default values and input project-specific values, but the California Environmental Quality Act ("CEQA") requires that such changes be justified by substantial evidence. Once all of the values are inputted into the model, the Project's construction and operational emissions are calculated, and "output files" are generated. These output

49

[1] http://www.astm.org/Standards/E1527.htm

[2] https://dtsc.ca.gov/wp-content/uploads/sites/31/2019/04/HHRA-Note-3-June-2020-A.pdf

[3] "CalEEMod User's Guide." California Air Pollution Control Officers Association (CAPCOA), May 2021, *available at:* http://www.aqmd.gov/docs/default-source/caleemod/user-guide-2021/01_user-39-s-guide2020-4-0.pdf?sfvrsn=6.

files disclose to the reader what parameters are utilized in calculating the Project's air pollutant emissions and make known which default values are changed as well as provide justification for the values selected.

When reviewing the Project's CalEEMod output files, provided in the Air Quality Appendix ("AQA") as Appendix AIR to the DEIR, we found that several model inputs were not consistent with information disclosed in the DEIR. As a result, the Project's construction and operational emissions are underestimated. Therefore, an updated EIR should be prepared to include an updated air quality analysis that adequately evaluates the impacts that construction and operation of the Project will have on local and regional air quality.

49 cont.

Unsubstantiated Changes to Off-Road Construction Equipment Horsepower, Load Factor, and Usage Hours

Review of the CalEEMod output files demonstrates that the "UCSF NHPH Construction Run" model includes several reductions to the default off-road construction equipment horsepower, load factor and usage hour values (see excerpt below) (Appendix AIR, pp. 845).

Table Name	Column Name	Default Value	New Value
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	8.00	2.40
tblOffRoadEquipment	UsageHours	7.00	1.60
tblOffRoadEquipment	UsageHours	7.00	1.60
tblOffRoadEquipment	UsageHours	7.00	2.40
tblOffRoadEquipment	UsageHours	7.00	1.60
tblOffRoadEquipment	UsageHours	6.00	0.80
tblOffRoadEquipment	UsageHours	7.00	2.00
tblOffRoadEquipment	UsageHours	7.00	2.00
tblOffRoadEquipment	UsageHours	8.00	0.80
tblOffRoadEquipment	HorsePower	402.00	325.00
tblOffRoadEquipment	LoadFactor	0.38	0.38

Note: This image only captures a handful of the off-road construction equipment horsepower, load factor, and usage hours.

50

As previously mentioned, the CalEEMod User's Guide requires any changes to model defaults be justified.[4] According to the "User Entered Comments and Non-Default Data" table, the justification provided for these changes is:

> "Construction equipment and usage factors provided by Herrero Bolt Webcor" (Appendix AIR, pp. 839).

[4] "CalEEMod User's Guide." California Air Pollution Control Officers Association (CAPCOA), May 2021, *available at:* https://www.aqmd.gov/caleemod/user's-guide, p. 1.

However, this justification is insufficient, as the DEIR and associated documents fail to provide the purported construction equipment list from Herrero Bolt Webcor. According to the CalEEMod User's Guide:

> "CalEEMod was also designed to allow the user to change the defaults to reflect site- or project-specific information, when available, provided that the information is supported by substantial evidence as required by CEQA."[5]

Here, as the DEIR and associated documents fail to provide substantial evidence that substantiates the off-road construction equipment horsepower, load factor, and usage hours, we are unable to verify the revised values.

50 cont.

These reductions present an issue, as CalEEMod uses off-road equipment horsepower, load factor and usage hours to calculate the emissions associated with off-road construction equipment.[6] By including incorrect changes to the default off-road construction equipment usage hours, the model may underestimate the Project's construction-related emissions and should not be relied upon to determine Project significance.

Unsubstantiated Changes to Hauling and Worker Trip Numbers

Review of the CalEEMod output files demonstrates that the "UCSF NHPH Construction Run" model includes several changes to the default hauling and worker trip numbers (see excerpt below) (Appendix AIR, pp. 845).

Table Name	Column Name	Default Value	New Value
tblTripsAndVMT	HaulingTripNumber	8.00	460.00
tblTripsAndVMT	HaulingTripNumber	14,188.00	11,790.00
tblTripsAndVMT	HaulingTripNumber	325.00	520.00
tblTripsAndVMT	HaulingTripNumber	0.00	170.00
tblTripsAndVMT	WorkerTripNumber	306.00	150.00
tblTripsAndVMT	WorkerTripNumber	306.00	250.00
tblTripsAndVMT	WorkerTripNumber	306.00	250.00
tblTripsAndVMT	WorkerTripNumber	306.00	250.00
tblTripsAndVMT	WorkerTripNumber	0.00	20.00
tblTripsAndVMT	WorkerTripNumber	28.00	150.00
tblTripsAndVMT	WorkerTripNumber	25.00	150.00
tblTripsAndVMT	WorkerTripNumber	25.00	150.00
tblTripsAndVMT	WorkerTripNumber	15.00	100.00

51

As previously mentioned, the CalEEMod User's Guide requires any changes to model defaults be justified.[7] According to the "User Entered Comments & Non-Default Data" table, the justification

[5] "CalEEMod User's Guide." California Air Pollution Control Officers Association (CAPCOA), May 2021, *available at:* https://www.aqmd.gov/caleemod/user's-guide, p. 13-14.
[6] "CalEEMod User's Guide." California Air Pollution Control Officers Association (CAPCOA), May 2021, *available at:* https://www.aqmd.gov/caleemod/user's-guide, p. 33.
[7] "CalEEMod User's Guide." California Air Pollution Control Officers Association (CAPCOA), May 2021, *available at:* https://www.aqmd.gov/caleemod/user's-guide, p. 1.

provided for these changes is: "Number of workers and haul trips provided by Herrero Bolt Webcor" (Appendix AIR, pp. 839). Furthermore, regarding the Project's anticipated number of hauling trips required for construction, the AQA provides the following calculations (Appendix AIR, pp. 835):

Calculation of Construction Haul Truck Trips

From EIR Attachment A from Hererro Bolt Webcor

		One Way Trips
Fuel Tank Excavation = 85 truck loads	85 truck loads	170
Moffett/Long Demo	230 truck loads	460
Hospital Export	110700 cy	
Truck capacity	20 cy	
Truck loads =	5535	11070
Hospital Import	5400 cy	
Truck capacity	15 cy	
Truck loads =	360	720
Total Hospital =		**11790**
Site Preparation Export	2600 cy	
Truck capacity	10 cy	
Truck loads =	260	520

51 cont.

Additionally, regarding the Project's anticipated number of worker trips during construction, the AQA provides the following calculations (Appendix AIR, pp. 834):

Calculation of Worker Construction Vehicle Trips - NHPH

Construction Workers

From EIR Attachment A from Hererro Bolt Webcor

Assume 2 trips per worker per day all in SOV
Otherwise use default

Phases (if applicable)	Number of Workers (Max.)	trips/day
LPPI Demolition		
Site Preparation / MCWUtilities	75	150
Grading / Shoring / Mass Excavation	75	150
Drainage / Utilities / Subgrade Utilities	75	150
Foundations	75	150
Structure	125	250
Exteriors Building Construction	125	250
Interiors Building Construction	250	500
Final Site Improvements	50	100
Other 1: Commissioning		
Other 2: ML Renovations/Bridge Tunnel Connection	TBD	

However, these changes remain unsupported for three reasons.

First, the DEIR and associated documents fail to provide access to the above-mentioned EIR Attachment A from Herrero Bolt Webcor. As such, we cannot verify the revised hauling and worker trip numbers are accurate. 52

Second, the model cannot simply assume a 20 cubic yard ("cy") haul truck capacity (Appendix AIR, pp. 835). According to the CalEEMod User's Guide:

> "Haul trips are based on the amount of material that is demolished, imported or exported assuming a truck can handle 16 cubic yards of material."[8] 53

Here, as the DEIR and associated documents fail to substantiate the use of 20 cy haul trucks during construction, the model may include an overestimated haul truck capacity and therefore underestimate the number of required hauling trips.

Third, the DEIR and associated documents fail to substantiate the estimated number of construction workers anticipated on the site, as listed by the AQA (Appendix AIR, pp. 834). Thus, we cannot verify the number of worker trips assumed in the model. 54

These unsubstantiated changes present an issue, as CalEEMod uses the hauling and worker trip numbers to estimate the construction-related emissions associated with on-road vehicles.[9] Thus, by including unsubstantiated changes to the default hauling and worker trip numbers, the model may underestimate the Project's mobile-source construction-related emissions and should not be relied upon to determine Project significance. 55

Unsubstantiated Reductions to Energy Use Values

Review of the CalEEMod output files demonstrates that the "UCSF New Hospital Operational Run" model includes several changes to the default energy use values (see excerpt below) (Appendix AIR, pp. 915). 56

Table Name	Column Name	Default Value	New Value
tblEnergyUse	LightingElect	4.23	0.00
tblEnergyUse	NT24E	5.52	0.00
tblEnergyUse	NT24NG	15.80	0.00
tblEnergyUse	T24E	5.78	0.00
tblEnergyUse	T24NG	84.04	0.00

As you can see in the excerpt above, the lighting electricity ("LightingElect"), Nontitle-24 electricity energy intensity ("NT24E"), and Title-24 electricity energy intensity ("T24E") values were all reduced to 0 kilowatt hours per square feet ("KWhr/SF"). As previously mentioned, the CalEEMod User's Guide

[8] "Appendix A Calculation Details for CalEEMod." California Air Pollution Control Officers Association (CAPCOA) , May 2021, *available at*: https://www.aqmd.gov/caleemod/user's-guide, p. 14.
[9] "CalEEMod User's Guide." California Air Pollution Control Officers Association (CAPCOA), May 2021, *available at:* https://www.aqmd.gov/caleemod/user's-guide, p. 35.

requires any changes to model defaults be justified.[10] According to the "User Entered Comments & Non-Default Data" table, the justification provided for these changes is:

> "UCSF Net zero electricity by 2025. No new Natural Gas hookups. Natural gas through CUP calculated separately" (Appendix AIR, pp. 914).

Furthermore, regarding the Project's anticipated energy use, the DEIR states:

> "UCSF purchases electricity from the UC Regents through the Direct Access Program, also referred to as the UC Clean Power Program. As of 2019, the UC Clean Power Program became 100 percent carbon neutral through the purchase of carbon-free electricity. UCSF has committed that by 2025, all of its purchased electricity will be carbon-free" (p. 4.5-5).

Finally, the DEIR states:

> "UCSF has committed to net zero electricity by 2025 and no GHG emissions are predicted from electrical usage under buildout of the NHPH" (p. 4.7-36).

56 cont.

However, these justifications are insufficient for four reasons.

First, UCSF's commitment to carbon-free electricity by 2025 is not included as a binding mitigation measure. This is incorrect, as according to the Association of Environmental Professionals ("AEP") *CEQA Portal Topic Paper* on mitigation measures:

> "While not "mitigation", a good practice is to include those project design feature(s) that address environmental impacts in the mitigation monitoring and reporting program (MMRP). Often the MMRP is all that accompanies building and construction plans through the permit process. If the design features are not listed as important to addressing an environmental impact, it is easy for someone not involved in the original environmental process to approve a change to the project that could eliminate one or more of the design features without understanding the resulting environmental impact."[11]

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As you can see in the excerpt above, project design features ("PDFs") that are not formally included as mitigation measures may be eliminated from the Project's design altogether. As such, absent additional information on UCSF's alleged commitment to carbon-free electricity, there is no guarantee that net zero electricity would actually be achieved on the Project site.

Second, while the DEIR claims that "UCSF purchases electricity from the UC Regents through the Direct Access Program, also referred to as the UC Clean Power Program," we cannot verify that UCSF purchases 100% of its electricity through the UC Clean Power Program. Furthermore, according to the University of California ("UC") 2021 Annual Report on Sustainable Practices, "UC Clean Power currently supplies

58

[10] "CalEEMod User's Guide." California Air Pollution Control Officers Association (CAPCOA), May 2021, *available at:* https://www.aqmd.gov/caleemod/user's-guide, p. 1.
[11] "CEQA Portal Topic Paper Mitigation Measures." AEP, February 2020, *available at:* https://ceqaportal.org/tp/CEQA%20Mitigation%202020.pdf, p. 6.

approximately 30% of the University [of California]'s purchased electricity."[12] As such, the UC Clean Power Program is not widely used across all UC campuses. Thus, as the DEIR fails to provide substantial evidence that *all* electricity would be purchased through the UC Clean Power Program, we cannot guarantee that UCSF's commitment to carbon-free electricity would actually be achieved on the Project site.

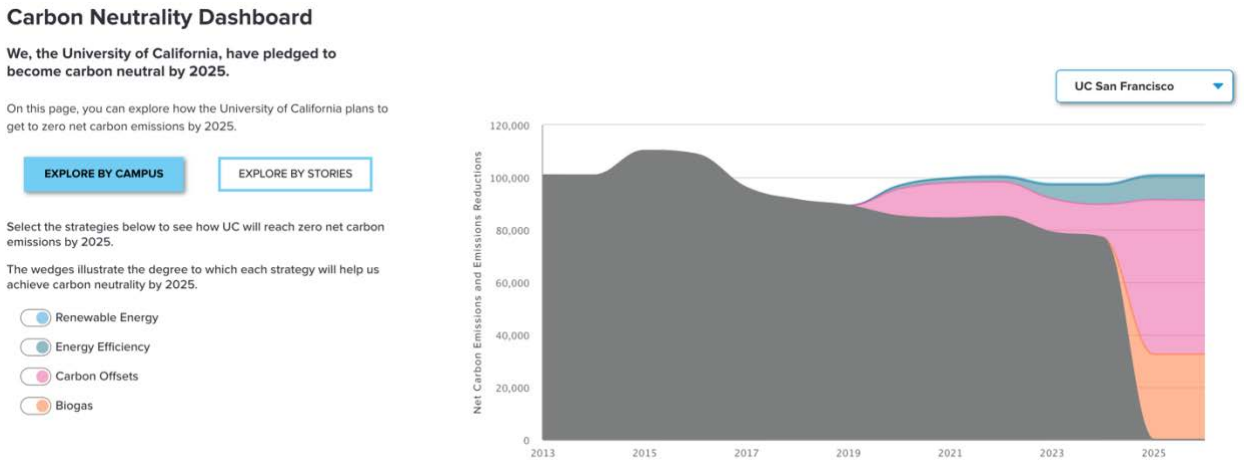
58 cont.

Third, the above-mentioned UC 2021 Annual Report on Sustainable Practices states:

> "To achieve the carbon neutrality goal by 2025, UC locations need to continue on the path to 100% carbon-free electricity, at least 40% biomethane, all-electric new buildings and increased energy efficiency, while also advancing plans for decarbonizing all campus energy systems in the long run and purchasing high quality carbon offsets in the near term."[13]

The UC 2021 Annual Report on Sustainable Practices references the Carbon Neutrality Initiative ("CNI"), which commits UC to emitting net zero greenhouse gas ("GHG") emissions from its buildings and vehicle fleet by 2025.[14] However, as indicated in the above excerpt, CNI does not specifically commit UC or UCSF to net zero electricity. Furthermore, UCSF specifically intends to use a combination of renewable energy, energy efficiency, carbon offsets, and biogas to achieve net zero GHG emissions (see excerpt below).[15]

59



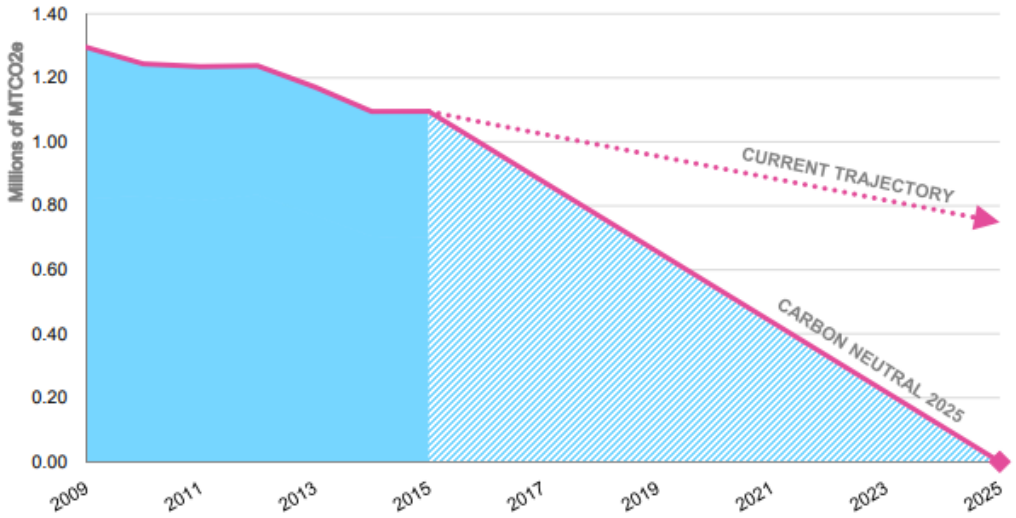
However, as demonstrated above, UCSF intends to primarily rely on carbon offsets, and seemingly no renewable energy, to achieve net zero GHG emissions. As such, UCSF not only fails to adequately commit to net zero electricity or substantiate the purchase of 100% carbon-free electricity, but also

[12] "2021 Annual Report on Sustainable Practices." University of California (UC), 2021, *available at:* https://sustainabilityreport.ucop.edu/2021/wp-content/uploads/sites/3/2021/12/2021-UC-Annual-Report-on-Sustainable-Practices-Summary.pdf, p. 2.
[13] "2021 Annual Report on Sustainable Practices." University of California (UC), 2021, *available at:* https://sustainabilityreport.ucop.edu/2021/wp-content/uploads/sites/3/2021/12/2021-UC-Annual-Report-on-Sustainable-Practices-Summary.pdf, p. 2.
[14] "Carbon Neutrality Initiative." University of California Office of the President, *available at:* https://ucop.edu/carbon-neutrality-initiative/index.html.
[15] "Carbon Neutrality Dashboard." University of California, *available at:* https://cnidashboard.ucop.edu/.

plans to use mostly carbon offsets, which allow for the continued release of GHG emissions and the consequent pollution, to achieve net zero GHG emissions. 59 cont.

Fourth, simply because UCSF has committed to net zero GHG emissions by 2025 does not guarantee that this goal will be achieved. According to the University of California's ("UC['s]") 2017 *Overcoming Barriers to Carbon Neutrality* report, the UC is not currently on track to achieve net zero electrical energy by 2025 (see excerpt below).[16] 60

UC Scope 1 and 2 Greenhouse Gas Emissions: Current Emissions and Trajectory Necessary to Reach Carbon Neutrality by 2025



This graph illustrates UC's current rate of progress toward eliminating carbon from our operations. We are on track for 2040. The question is how to gain sufficient momentum to achieve carbon neutrality by 2025.

As such, without additional information regarding how the proposed Project would feasibly achieve zero net electrical energy by 2025, the revised energy use values are unsubstantiated.

These unsubstantiated changes present an issue, as the energy use values are used by CalEEMod to calculate the Project's emissions associated with building electricity and natural gas usage.[17] By including unsubstantiated reductions to the Project's anticipated energy use values, the model may underestimate the Project's operational emissions and should not be relied upon to determine Project significance. 61

Diesel Particulate Matter Health Risk Emissions Inadequately Evaluated

The DEIR concludes that the NHPH Project would result in a less-than-significant health risk impact based on quantified construction-related and operational health risk analyses ("HRA(s)") (p. 4.2-32, 4.2-35). Specifically, the DEIR estimates that the mitigated residential cancer risk posed to nearby, existing 62

[16] "Overcoming Barriers to Carbon Neutrality." University of California, August 2017, *available at:* https://ucop.edu/carbon-neutrality-initiative/_files/overcoming-barriers-to-carbon-neutrality.pdf, p. I.
[17] CalEEMod User's Guide." California Air Pollution Control Officers Association (CAPCOA), May 2021, *available at:* https://www.aqmd.gov/caleemod/user's-guide, p. 43.

sensitive receptors associated with Project construction and operation would be 5.6 and 8.6 in one million, respectively (see excerpts below) (p. 4.2-32, Table 4.2-10; p. 4.2-35, Table 4.2-11).

NHPH Construction:

TABLE 4.2-10
MITIGATED PROJECT HEALTH RISK ESTIMATED, NHPH CONSTRUCTION

Receptor Type[a]	Cancer Risk	Chronic Hazard Index[b,c]	$PM_{2.5}$ Concentration ($\mu g/m^3$)[c]
Off-Campus Residence			
Project Construction[d]	5.6	0.01	0.03
Significance Threshold	10	1.0	0.3
Significant (Yes or No)?	No	No	No

NHPH Operation:

TABLE 4.2-11
ESTIMATED OPERATIONAL HEALTH IMPACTS OF THE NHPH

Receptor Type	Cancer Risk	Chronic Hazard Index	Acute Hazard Index	$PM_{2.5}$ Concentration ($\mu g/m3$)[d]
Off-Campus Residence				
Project Operations	8.6	0.01	0.02	0.14
Significance Threshold	10	1.0	1.0	0.3
Significant (Yes or No)?	No	No	No	No

62 cont.

However, the DEIR's evaluation of the Project's potential health risk impacts, as well as the subsequent less-than-significant impact conclusion, is incorrect for two reasons.

First, the DEIR's operational HRA fails to account for all mobile-source diesel particulate matter ("DPM") emissions. Specifically, the DEIR states:

> "Emissions calculations and air dispersion modeling was completed for the New Hospital building's fume hoods, cooling tower and emergency diesel generators, the increase in natural gas combustion at the CUP, and loading dock emissions associated with increased deliveries" (p. 4.2-34).

As demonstrated above, the DEIR's operational HRA calculations consider emissions associated with delivery vehicles. However, according to the DEIR:

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> "Increased vehicle emissions from additional hospital visitors and staff, would be one of the major sources of operational emissions. The net increase in VMT that would occur with operation of the NHPH that was used in this analysis to estimate vehicle-related emissions was derived from the transportation analysis in Section 4.15, *Transportation*. Project operations are projected to generate approximately 53,600 additional daily VMT. In addition to exhaust emissions, vehicles would also generate PM_{10} and $PM_{2.5}$ emissions from entrained road dust and tire and brake wear" (p. 4.2-29).

As demonstrated above, the Project's mobile-source emissions are largely generated by hospital visitors and staff. As such, by failing to evaluate all mobile-source emissions, the DEIR's operational HRA and associated cancer risk are underestimated.

Second, the Office of Environmental Health Hazard Assessment ("OEHHA"), the organization responsible for providing guidance on conducting HRAs in California, released its most recent *Risk Assessment Guidelines: Guidance Manual for Preparation of Health Risk Assessments* in February 2015.[18] According to OEHHA guidance, "the excess cancer risk is calculated separately for each age grouping and then summed to yield cancer risk at the receptor location." [19] Here, the DEIR includes two HRAs evaluating the health risk impacts to nearby, existing receptors as a result of Project construction and operation, but violates OEHHA guidance by failing to evaluate the combined lifetime cancer risk as a result of Project construction and operation together. Thus, the DEIR's HRAs fail to sum each age bin to evaluate the total cancer risk over the course of the Project's total construction and operation. This is incorrect and, as such, an updated analysis should quantify the entirety of the Project's construction and operational health risks and then sum them to compare to the BAAQMD threshold of 10 in one million, as referenced by the DEIR (p. 4.2-33). 64

Failure to Identify a Potentially Significant Health Risk Impact

As previously described, the DEIR estimates that the maximum individual cancer risk posed to nearby, existing sensitive receptors as a result of Project construction and operation would be 5.6 and 8.6 in one million, respectively, neither of which individually exceed the BAAQMD significance threshold of 10 in one million (p. 4.2-32, Table 4.2-10; p. 4.2-35, Table 4.2-11). However, as previously discussed, the DEIR should have evaluated the combined construction-related and operational cancer risks resulting from the Project. In order to correctly evaluate and disclose the Project's health risk impact, we summed the DEIR's construction-related and operational cancer risk estimates and found that the resulting cancer risk exceeds the BAAQMD threshold of 10 in one million (see table below). 65

NHPH Total Cancer Risk	
HRA	**Cancer Risk** (in one million)
Construction	5.6
Operation	8.6
SWAPE	14.20
BAAQMD Threshold	**10**
Exceeds?	***Yes***

As demonstrated in the table above, the resulting combined cancer risk estimate exceeds the BAAQMD threshold of 10 in one million. Thus, the Project poses a potentially significant health risk to nearby existing sensitive receptors, which was not previously identified or addressed by the DEIR. As such, the

[18] "Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessments." OEHHA, February 2015, *available at:* https://oehha.ca.gov/air/crnr/notice-adoption-air-toxics-hot-spots-program-guidance-manual-preparation-health-risk-0.

[19] "Guidance Manual for preparation of Health Risk Assessments." OEHHA, February 2015, *available at:* https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf p. 8-4

DEIR is required under CEQA to implement all feasible mitigation to reduce impacts to a less-than-significant level. According to CEQA Guidelines § 15096(g)(2):

> "When an EIR has been prepared for a project, the Responsible Agency shall not approve the project as proposed if the agency finds any feasible alternative or feasible mitigation measures within its powers that would substantially lessen or avoid any significant effect the project would have on the environment."

65 cont.

As you can see, the proposed Project should not be approved until all feasible mitigation has been considered and incorporated where feasible, such as those suggested in the section of this letter titled "Feasible Mitigation Measures Available to Reduce Emissions." As such, the DEIR fails to identify and adequately mitigate the Project's potentially significant health risk impact, and the less-than-significant impact conclusion should not be relied upon.

Furthermore, when accounting for the UCSF Comprehensive Heights Plan Project ("CPHP") as a whole, the proposed Project poses a greater health risk impact. Specifically, the DEIR states:

> "The CPHP included an "Initial Phase" to be completed by approximately year 2030 that primarily comprised: 1) Irving Street Arrival improvements, 2) a Research and Academic Building (RAB), 3) a New Hospital, and 4) initial Aldea Housing Densification; as well as certain other Initial Phase improvements" (p. 3-2).

As such, when considering construction and operation of all four components of the CPHP, the proposed Project results in a larger combined cancer risk. Review of the July 2020 Draft Environmental Impact Report for the UCSF Comprehensive Parnassus Heights Plan ("CPHP EIR") demonstrates that construction of the Irving Street Arrival, RAB, and Initial Aldea Housing Densification would result in cancer risks pf 1.17, 2.91, and 0.67 in one million, respectively, after the implementation of CPHP Mitigation Measure AIR-1a (see excerpts below) (p. 4.2-53-56, Table 4.2-15, Table 4.2-16, Table 4.2-18).

66

Irving Street Arrival Construction:

TABLE 4.2-15
MITIGATED PROJECT HEALTH IMPACTS ESTIMATED, IRVING STREET ARRIVAL CONSTRUCTION

Receptor Type[a]	Cancer Risk	Chronic Hazard Index[b,c]	$PM_{2.5}$ Concentration ($\mu g/m^3$)[c]
Resident – Offsite Receptor			
Project Construction[d]	1.17	<0.01	<0.01
Significance Threshold	10	1.0	0.3
Significant (Yes or No)?	No	No	No

RAB Construction:

TABLE 4.2-16
MITIGATED PROJECT HEALTH IMPACTS ESTIMATED, RAB CONSTRUCTION

Receptor Type[a]	Cancer Risk	Chronic Hazard Index[b,c]	$PM_{2.5}$ Concentration ($\mu g/m^3$)[c]
Resident – Offsite Receptor			
Project Construction[d]	2.91	<0.01	0.01
Significance Threshold	10	1.0	0.3
Significant (Yes or No)?	No	No	No

Initial Aldea Housing Densification Construction:

TABLE 4.2-18
MITIGATED PROJECT HEALTH IMPACTS ESTIMATED, INITIAL ALDEA HOUSING DENSIFICATION CONSTRUCTION

Receptor Type[a]	Cancer Risk	Chronic Hazard Index[b,c]	$PM_{2.5}$ Concentration ($\mu g/m^3$)[c]
Resident – Offsite Receptor			
Project Construction[d]	0.67	<0.01	<0.01
Significance Threshold	10	1.0	0.3
Significant (Yes or No)?	No	No	No

66 cont.

Furthermore, the CPHP EIR estimates that the residential cancer risk posed to nearby, existing sensitive receptors associated with operation of the RAB component of the Initial Phase would be 0.26 in one million (see excerpt below) (p. 4.2-62, Table 4.2-19).

RAB Operation:

TABLE 4.2-19
ESTIMATED OPERATIONAL HEALTH IMPACTS OF THE RAB

Receptor Type	Cancer Risk	Chronic Hazard Index	Acute Hazard Index	$PM_{2.5}$ Concentration ($\mu g/m3$)[d]
Resident – Offsite Receptor				
Project Operations	0.26	<0.01	<0.01	0.01
Significance Threshold	10	1.0	1.0	0.3
Significant (Yes or No)?	No	No	No	No
Resident – Onsite Residence				
Project Operations	0.04	<0.01	<0.01	<0.01
Significance Threshold	10	1.0	1.0	0.3
Significant (Yes or No)?	No	No	No	No

However, as previously discussed, the DEIR should have evaluated the combined the construction-related and operational cancer risks resulting from the Project. In order to correctly evaluate the Project's health risk impact, we summed the DEIR's construction-related and operational cancer risk estimates and found that the resulting cancer risk exceeds the BAAQMD threshold of 10 in one million (see table below).

67

CHPH Total Cancer Risk	
HRA	**Cancer Risk** (in one million)
NHPH Construction	5.6
Irving Street Arrival Construction	1.17
RAB Construction	2.91
Initial Aldea Housing Densification Construction	0.67
NHPH Operation	8.6
RAB Operation	0.26
SWAPE	19.21
BAAQMD Threshold	**10**
Exceeds?	***Yes***

67 cont.

As demonstrated in the table above, the resulting combined cancer risk estimate associated with all four components of the UCSF CPHP exceeds the BAAQMD threshold of 10 in one million by a greater extent. Furthermore, the resulting combined cancer risk still fails to include and sum the cancer risk associated with operation of the Irving Street Arrival and Initial Aldea Housing Densification components of the CPHP. Regardless, the Project again poses a potentially significant health risk to nearby existing sensitive receptors, which was not previously identified or addressed by the DEIR.

Greenhouse Gas

Failure to Adequately Evaluate Greenhouse Gas Impacts

The DEIR estimates that the Project would generate net annual greenhouse gas ("GHG") emissions of 27,449 metric tons of carbon dioxide equivalents per year ("MT CO_2e/year"), which exceeds the net zero threshold (see excerpt below) (p. 4.7-36, Table 4.7-3).

68

TABLE 4.7-3
ANNUAL OPERATIONAL GHG EMISSIONS: YEAR 2030 WITH THE NHPH

Emission Source	Emissions (metric tons year)			
	CO_2	CH_4	N_2O	Total CO_2e
Mobile Sources[a]	5,550	<1	<1	5,644
Electricity[b]	0	0	0	0
Natural gas combustion (CUP)	19,729	0.3	1.04	20,047
Water and wastewater	35.8	3.7	<1	154
Solid Waste	434	25.7	<1	1,075
Generators	237	<1	<1	237
Construction (Amortized 30 years)	292	<1	<1	292
Total Increase in GHGs (2030)	**26,278**	29.7	1	**27,449**
Achieve Net Zero Increase?				No
Significant Impact?				Yes

However, the DEIR concludes that the Project would result in a less-than-significant GHG impact after the implementation of Mitigation Measure ("MM") GHG-1 (p. 4.7-38 - 4.7-40). Specifically, MM GHG-1 states:

> "NHPH Mitigation Measure GHG-1: Monitor emissions annually and acquire carbon offset credits in conformance with CARB guidance, prioritizing local and in- State offsets to achieve and maintain carbon neutrality for the NHPH as part of campus-wide emissions.
>
> As part of this mitigation measure, UCSF is making the following separate, though overlapping, GHG emission reduction commitments: (1) As a CARB-covered entity, UCSF will maintain compliance with CARB's cap and trade program; (2) Per existing UC Policy, UCSF's Scope 1 and Scope 2 GHG emissions shall, commencing in 2025, be entirely carbon neutral; (3) Also per existing UC Policy, commencing in 2025, UCSF's Scope 1 and Scope 2 emissions shall be voluntarily offset while Scope 3 emissions from commuters and air travel shall be voluntarily offset by 2050; and (4) UCSF's total GHG operational emissions from all Scope 1, 2, and 3 sources (as defined in this EIR) shall not exceed the Parnassus Heights campus's baseline emissions from these sources in 2019" (p. 4.7-38 – 4.7-39).

68 cont.

However, the DEIR's GHG analysis, as well as the subsequent less-than-significant impact conclusion, is incorrect for three reasons.

First, as previously stated, the DEIR estimates that the Project would generate net annual GHG emissions of 27,449 MT CO_2e/year (p. 4.7-36, Table 4.7-3). However, the DEIR's quantitative GHG analysis is unsubstantiated. As previously discussed, when we reviewed the Project's CalEEMod output files, provided in the AQA as Appendix AIR to the DEIR, we found that several of the values inputted into the model are not consistent with information disclosed in the DEIR. As a result, the model underestimates the Project's emissions, and the DEIR's quantitative GHG analysis should not be relied upon to determine Project significance. An updated EIR should be prepared that adequately assesses the potential GHG impacts that construction and operation of the proposed Project may have on the surrounding environment.

69

Second, the air model assumes the Project will achieve net zero electricity. As such, DEIR estimates that the Project would generate zero energy-related GHG emissions (see excerpt below) (p. 4.7-36, Table 4.7-3).

70

TABLE 4.7-3
ANNUAL OPERATIONAL GHG EMISSIONS: YEAR 2030 WITH THE NHPH

Emission Source	Emissions (metric tons year)			
	CO_2	CH_4	N_2O	Total CO_2e
Mobile Sources[a]	5,550	<1	<1	5,644
Electricity[b]	0	0	0	0
Natural gas combustion (CUP)	19,729	0.3	1.04	20,047
Water and wastewater	35.8	3.7	<1	154
Solid Waste	434	25.7	<1	1,075
Generators	237	<1	<1	237
Construction (Amortized 30 years)	292	<1	<1	292
Total Increase in GHGs (2030)	**26,278**	29.7	1	**27,449**
Achieve Net Zero Increase?				No
Significant Impact?				Yes

70 cont.

However, as previously discussed in the section of this letter titled "Unsubstantiated Reductions to Energy Use Values," UCSF fails to commit to net zero electricity. Rather, the Carbon Neutrality Initiative loosely commits UCSF to emit net zero GHG emissions through the use of carbon offsets, which allow for the continued release of GHG emissions. As a result, because the DEIR's analysis assumes that the Project would utilize net zero electrical energy by 2025, and the record does not support that assumption, we cannot verify the DEIR's less-than-significant impact conclusion.

Third, we recommend the Project consider further mitigation measures to reduce tangible Project-generated GHG emissions. According to NHPH Mitigation Measure ("MM") GHG-1:

> "UCSF shall monitor GHG operational emissions from all Scope 1, 2 and 3 sources annually. Upon the completion and occupancy of the NHPH, inclusive of the related improvements, in 2033, the estimated annual emissions shall be compared to the campus site year 2019 baseline of 127,083 MT CO_2e per year to determine whether the emissions have increased above the baseline level. For the identified amount of exceedance of the performance standard, UCSF shall purchase carbon offset credits sufficient to maintain carbon neutrality" (p. 2-20).

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As demonstrated above, the DEIR fails to implement any additional mitigation measures to reduce localized GHG emissions, and instead proposes the use of carbon offsets to maintain carbon neutrality. Thus, as the DEIR fails to define an exceedance limit, Project-generated GHG emissions may considerably exceed the campus site year 2019 baseline. UCSF's intended use of only carbon offsets to maintain carbon neutrality is irresponsible and careless. Instead of making any attempt to directly reduce Project-generated GHG emissions, the Project uses carbon offsets as a way to keep polluting the environment. According to Greenpeace, the largest environmental organization in the world:

> "There is a reason that Indigenous Environmental Network and Indigenous Climate Action held a protest against offsetting at COP26, the UN's annual climate conference: Offsetting incentivizes the commodification of nature and allows powerful corporations to take over the lands of vulnerable communities, risking human rights abuses. Offset schemes often exclude local and

> Indigenous Peoples from land management practices that allow them to grow food and preserve biodiversity."[20]

71 cont.

Furthermore, according to the World Economic Forum:

> "What these polluting profiteers see as their "get-out-of-jail-free card" in the climate game is offsetting – or, to speak plainly, the heap of voluntary net-zero commitments that are being rolled out almost daily. Nothing new, offsetting is about paying for someone else to reduce or remove carbon, while you continue pumping it into the atmosphere."[21]

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Thus, as one of the nation's leading academic medical centers, UCSF's reliance on carbon offsets is imprudent and sets a bad precedent. Additionally, California's Cap-and-Trade Program limits the use of offsets to only 4% of a company's compliance obligation each year, thus demonstrating that the use of offsets should not act as an entire solution.[22]

Furthermore, review of correspondence between UCSF staff dated August 19, 2020 to August 20, 2020 demonstrates that a cost benefit analysis indicated that carbon offsets are cheaper than project design or engineering features intended to actually reduce emissions.[23] By concluding a less-than-significant GHG impact after relying solely on carbon offset mitigation, it appears that UCSF prioritizes cost rather than environmental protection. We find this to be in direct contradiction with CEQA's intent to prevent or minimize environmental damage to the highest extent possible.

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In order to reduce the Project's GHG impacts to the maximum extent possible, we recommend additional feasible mitigation measures be incorporated, such as those suggested in the section of this letter titled "Feasible Mitigation Measures Available to Reduce Emissions." As a result, we recommend the Project not be approved until an updated EIR is prepared and incorporates all feasible mitigation, including specifically project design and engineering features, to reduce localized Project-generated GHG emissions.

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Feasible Mitigation Measures Available to Reduce Emissions

Our analysis demonstrates that the Project would result in a significant health risk impact that should be mitigated further. We also recommend that the DEIR consider mitigation measures to reduce localized GHG emissions at the Project site. As such, in an effort to reduce the Project's emissions, we identified several mitigation measures that are applicable to the proposed Project. Therefore, to reduce the Project's emissions, we recommend consideration of SCAG's 2020 *RTP/SCS* PEIR's Air Quality Project

75

[20] "Carbon offsets are a scam." Greenpeace, November 2021, *available at:* https://www.greenpeace.org/international/story/50689/carbon-offsets-net-zero-greenwashing-scam/#:~:text=Offsets%20emit%20injustice&text=We%20cannot%20allow%20the%20richest,communities%20that%20need%20it%20most.

[21] "Why carbon offsetting doesn't cut it." World Economic Forum, September 2021, *available at:* https://www.weforum.org/agenda/2021/09/greenpeace-international-carbon-offsetting-net-zero-pledges-climate-change-action/.

[22] "FAQ Cap-and-Trade Program." California Air Resources Board, *available at:* https://ww2.arb.ca.gov/resources/documents/faq-cap-and-trade-program.

[23] See Attachment A.

Level Mitigation Measures ("PMM-AQ-1") and Greenhouse Gas Project Level Mitigation Measures ("PMM-GHG-1"), as described below: [24]

SCAG RTP/SCS 2020-2045
Air Quality Project Level Mitigation Measures – PMM-AQ-1: In accordance with provisions of sections 15091(a)(2) and 15126.4(a)(1)(B) of the *State CEQA Guidelines*, a Lead Agency for a project can and should consider mitigation measures to reduce substantial adverse effects related to violating air quality standards. Such measures may include the following or other comparable measures identified by the Lead Agency:
b) Suspend grading and earth moving when wind gusts exceed 25 miles per hour unless the soil is wet enough to prevent dust plumes.
d) Stabilize the surface of dirt piles if not removed immediately.
e) Limit vehicular paths on unpaved surfaces and stabilize any temporary roads.
f) Minimize unnecessary vehicular and machinery activities.
h) Revegetate disturbed land, including vehicular paths created during construction to avoid future off-road vehicular activities.
j) Require contractors to assemble a comprehensive inventory list (i.e., make, model, engine year, horsepower, emission rates) of all heavy-duty off-road (portable and mobile) equipment (50 horsepower and greater) that could be used an aggregate of 40 or more hours for the construction project. Prepare a plan for approval by the applicable air district demonstrating achievement of the applicable percent reduction for a CARB-approved fleet.
n) Utilize existing power sources (e.g., power poles) or clean fuel generators rather than temporary power generators.
o) Develop a traffic plan to minimize traffic flow interference from construction activities. The plan may include advance public notice of routing, use of public transportation, and satellite parking areas with a shuttle service. Schedule operations affecting traffic for off-peak hours. Minimize obstruction of through-traffic lanes. Provide a flag person to guide traffic properly and ensure safety at construction sites.
p) As appropriate require that portable engines and portable engine-driven equipment units used at the project work site, with the exception of on-road and off-road motor vehicles, obtain CARB Portable Equipment Registration with the state or a local district permit. Arrange appropriate consultations with the CARB or the District to determine registration and permitting requirements prior to equipment operation at the site.
t) Where applicable, projects should provide information about air quality related programs to schools, including the Environmental Justice Community Partnerships (EJCP), Clean Air Ranger Education (CARE), and Why Air Quality Matters programs.
u) Projects should work with local cities and counties to install adequate signage that prohibits truck idling in certain locations (e.g., near schools and sensitive receptors).
y) Projects that will introduce sensitive receptors within 500 feet of freeways and other sources should consider installing high efficiency of enhanced filtration units, such as Minimum Efficiency Reporting Value (MERV) 13 or better. Installation of enhanced filtration units can be verified during occupancy inspection prior to the issuance of an occupancy permit.

75 cont.

[24] "4.0 Mitigation Measures." Connect SoCal Program Environmental Impact Report Addendum #1, September 2020, available at: https://scag.ca.gov/sites/main/files/file-attachments/fpeir_connectsocal_addendum_4_mitigationmeasures.pdf?1606004420, p. 4.0-2 – 4.0-10; 4.0-19 – 4.0-23; See also: "Certified Final Connect SoCal Program Environmental Impact Report." Southern California Association of Governments (SCAG), May 2020, *available at:* https://scag.ca.gov/peir.

z) Develop an ongoing monitoring, inspection, and maintenance program for the MERV filters.

aa) Consult the SCAG Environmental Justice Toolbox for potential measures to address impacts to low-income and/or minority communities.

bb) The following criteria related to diesel emissions shall be implemented on by individual project sponsors as appropriate and feasible:

- Diesel nonroad vehicles on site for more than 10 total days shall have either (1) engines that meet EPA on road emissions standards or (2) emission control technology verified by EPA or CARB to reduce PM emissions by a minimum of 85%
- Diesel generators on site for more than 10 total days shall be equipped with emission control technology verified by EPA or CARB to reduce PM emissions by a minimum of 85%.
- Nonroad diesel engines on site shall be Tier 2 or higher.
- Diesel nonroad construction equipment on site for more than 10 total days shall have either (1) engines meeting EPA Tier 4 nonroad emissions standards or (2) emission control technology verified by EPA or CARB for use with nonroad engines to reduce PM emissions by a minimum of 85% for engines for 50 hp and greater and by a minimum of 20% for engines less than 50 hp.
- Emission control technology shall be operated, maintained, and serviced as recommended by the emission control technology manufacturer.
- Diesel vehicles, construction equipment, and generators on site shall be fueled with ultra-low sulfur diesel fuel (ULSD) or a biodiesel blend approved by the original engine manufacturer with sulfur content of 15 ppm or less.
- The construction contractor shall maintain a list of all diesel vehicles, construction equipment, and generators to be used on site. The list shall include the following:
    i. Contractor and subcontractor name and address, plus contact person responsible for the vehicles or equipment.
    ii. Equipment type, equipment manufacturer, equipment serial number, engine manufacturer, engine model year, engine certification (Tier rating), horsepower, engine serial number, and expected fuel usage and hours of operation.
    iii. For the emission control technology installed: technology type, serial number, make, model, manufacturer, EPA/CARB verification number/level, and installation date and hour-meter reading on installation date.
- The contractor shall establish generator sites and truck-staging zones for vehicles waiting to load or unload material on site. Such zones shall be located where diesel emissions have the least impact on abutters, the general public, and especially sensitive receptors such as hospitals, schools, daycare facilities, elderly housing, and convalescent facilities.
- The contractor shall maintain a monthly report that, for each on road diesel vehicle, nonroad construction equipment, or generator onsite, includes:
    i. Hour-meter readings on arrival on-site, the first and last day of every month, and on off-site date.
    ii. Any problems with the equipment or emission controls.
    iii. Certified copies of fuel deliveries for the time period that identify:
        1. Source of supply
        2. Quantity of fuel
        3. Quantity of fuel, including sulfur content (percent by weight)

cc) Project should exceed Title-24 Building Envelope Energy Efficiency Standards (California Building Standards Code). The following measures can be used to increase energy efficiency:

- Provide pedestrian network improvements, such as interconnected street network, narrower roadways and shorter block lengths, sidewalks, accessibility to transit and transit shelters, traffic calming measures, parks and public spaces, minimize pedestrian barriers.
- Provide traffic calming measures, such as:
    i. Marked crosswalks
    ii. Count-down signal timers
    iii. Curb extensions iv. Speed tables

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iv. Raised crosswalks
v. Raised intersections
vi. Median islands
vii. Tight corner radii
viii. Roundabouts or mini-circles
ix. On-street parking
x. Chicanes/chokers

- Create urban non-motorized zones
- Provide bike parking in non-residential and multi-unit residential projects
- Dedicate land for bike trails
- Limit parking supply through:
  i. Elimination (or reduction) of minimum parking requirements
  ii. Creation of maximum parking requirements
  iii. Provision of shared parking
- Require residential area parking permit.
- Provide ride-sharing programs
  i. Designate a certain percentage of parking spacing for ride sharing vehicles
  ii. Designating adequate passenger loading and unloading and waiting areas for ride-sharing vehicles
  iii. Providing a web site or messaging board for coordinating rides
  iv. Permanent transportation management association membership and finding requirement.

Greenhouse Gas Project Level Mitigation Measures – PMM-GHG-1

In accordance with provisions of sections 15091(a)(2) and 15126.4(a)(1)(B) of the *State CEQA Guidelines*, a Lead Agency for a project can and should consider mitigation measures to reduce substantial adverse effects related to violating air quality standards. Such measures may include the following or other comparable measures identified by the Lead Agency:

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b) Reduce emissions resulting from projects through implementation of project features, project design, or other measures, such as those described in Appendix F of the State CEQA Guidelines.

d) Measures that consider incorporation of Best Available Control Technology (BACT) during design, construction and operation of projects to minimize GHG emissions, including but not limited to:

i. Use energy and fuel-efficient vehicles and equipment;
ii. Deployment of zero- and/or near zero emission technologies;
iii. Use lighting systems that are energy efficient, such as LED technology;
iv. Use the minimum feasible amount of GHG-emitting construction materials;
v. Use cement blended with the maximum feasible amount of flash or other materials that reduce GHG emissions from cement production;
vi. Incorporate design measures to reduce GHG emissions from solid waste management through encouraging solid waste recycling and reuse;
vii. Incorporate design measures to reduce energy consumption and increase use of renewable energy;
viii. Incorporate design measures to reduce water consumption;
ix. Use lighter-colored pavement where feasible;
x. Recycle construction debris to maximum extent feasible;
xi. Plant shade trees in or near construction projects where feasible; and
xii. Solicit bids that include concepts listed above.

e) Measures that encourage transit use, carpooling, bike-share and car-share programs, active transportation, and parking strategies, including, but not limited to the following:

i. Promote transit-active transportation coordinated strategies;
ii. Increase bicycle carrying capacity on transit and rail vehicles;
iii. Improve or increase access to transit;
iv. Increase access to common goods and services, such as groceries, schools, and day care;
v. Incorporate affordable housing into the project;
vi. Incorporate the neighborhood electric vehicle network;
vii. Orient the project toward transit, bicycle and pedestrian facilities;
viii. Improve pedestrian or bicycle networks, or transit service;
ix. Provide traffic calming measures;
x. Provide bicycle parking;
xi. Limit or eliminate park supply;
xii. Unbundle parking costs;
xiii. Provide parking cash-out programs;
xiv. Implement or provide access to commute reduction program;

f) Incorporate bicycle and pedestrian facilities into project designs, maintaining these facilities, and providing amenities incentivizing their use; and planning for and building local bicycle projects that connect with the regional network;

g) Improving transit access to rail and bus routes by incentives for construction and transit facilities within developments, and/or providing dedicated shuttle service to transit stations; and

h) Adopting employer trip reduction measures to reduce employee trips such as vanpool and carpool programs, providing end-of-trip facilities, and telecommuting programs including but not limited to measures that:

i. Provide car-sharing, bike sharing, and ride-sharing programs;
ii. Provide transit passes;
iii. Shift single occupancy vehicle trips to carpooling or vanpooling, for example providing ride-matching services;
iv. Provide incentives or subsidies that increase that use of modes other than single-occupancy vehicle;
v. Provide on-site amenities at places of work, such as priority parking for carpools and vanpools, secure bike parking, and showers and locker rooms;
vi. Provide employee transportation coordinators at employment sites;
vii. Provide a guaranteed ride home service to users of non-auto modes.

i) Designate a percentage of parking spaces for ride-sharing vehicles or high-occupancy vehicles, and provide adequate passenger loading and unloading for those vehicles;

j) Land use siting and design measures that reduce GHG emissions, including:

i. Developing on infill and brownfields sites;
ii. Building compact and mixed-use developments near transit;
iii. Retaining on-site mature trees and vegetation, and planting new canopy trees;
iv. Measures that increase vehicle efficiency, encourage use of zero and low emissions vehicles, or reduce the carbon content of fuels, including constructing or encouraging construction of electric vehicle charging stations or neighborhood electric vehicle networks, or charging for electric bicycles; and
v. Measures to reduce GHG emissions from solid waste management through encouraging solid waste recycling and reuse.

k) Consult the SCAG Environmental Justice Toolbox for potential measures to address impacts to low-income and/or minority communities. The measures provided above are also intended to be applied in low income and minority communities as applicable and feasible.

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l) Require at least five percent of all vehicle parking spaces include electric vehicle charging stations, or at a minimum, require the appropriate infrastructure to facilitate sufficient electric charging for passenger vehicles and trucks to plug-in.
m) Encourage telecommuting and alternative work schedules, such as: i. Staggered starting times ii. Flexible schedules iii. Compressed work weeks
n) Implement commute trip reduction marketing, such as: i. New employee orientation of trip reduction and alternative mode options ii. Event promotions iii. Publications
o) Implement preferential parking permit program
p) Implement school pool and bus programs
q) Price workplace parking, such as: i. Explicitly charging for parking for its employees; ii. Implementing above market rate pricing; iii. Validating parking only for invited guests; iv. Not providing employee parking and transportation allowances; and v. Educating employees about available alternatives.

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These measures offer a cost-effective, feasible way to incorporate lower-emitting design features into the proposed Project, which subsequently, reduce emissions released during Project construction and operation. An updated EIR should be prepared to include all feasible mitigation measures, as well as include updated health risk and GHG analyses to ensure that the necessary mitigation measures are implemented to reduce emissions to below thresholds. The updated EIR should also demonstrate a commitment to the implementation of these measures prior to Project approval, to ensure that the Project's significant emissions are reduced to the maximum extent possible.

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Disclaimer

SWAPE has received limited discovery regarding this project. Additional information may become available in the future; thus, we retain the right to revise or amend this report when additional information becomes available. Our professional services have been performed using that degree of care and skill ordinarily exercised, under similar circumstances, by reputable environmental consultants practicing in this or similar localities at the time of service. No other warranty, expressed or implied, is made as to the scope of work, work methodologies and protocols, site conditions, analytical testing results, and findings presented. This report reflects efforts which were limited to information that was reasonably accessible at the time of the work, and may contain informational gaps, inconsistencies, or otherwise be incomplete due to the unavailability or uncertainty of information obtained or provided by third parties.

Sincerely,

Matt Hagemann, P.G., C.Hg.

Paul E. Rosenfeld, Ph.D.

Attachment A: UCSF Staff Correspondence
Attachment B: Matt Hagemann CV
Attachment C: Paul E. Rosenfeld CV

EXHIBIT 2

Shawn Smallwood, PhD
3108 Finch Street
Davis, CA 95616

Diane Wong
UCSF Real Estate - Campus Planning
654 Minnesota Street
San Francisco, CA 94143-0286

14 February 2022

RE: UCSF New Hospital at Parnassus Heights

Dear Ms. Wong,

I write to comment on UCSF's (2021) Draft Environmental Impact Report ("DEIR") prepared for the UCSF New Hospital at Parnassus Heights project, which I understand would add 900,000 square feet of floor space within a 15-story building on Block/lot 2634A/011 & 005. The DEIR inadequately addresses bird-window collisions. 77

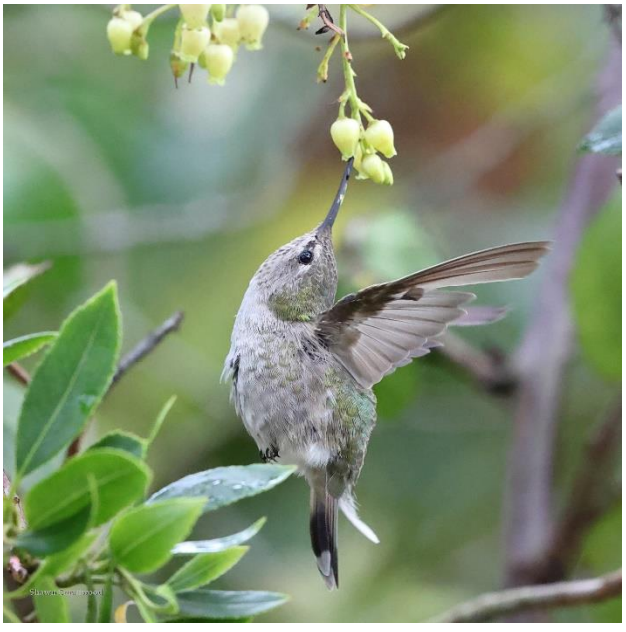
My qualifications for preparing expert comments are the following. I hold a Ph.D. degree in Ecology from University of California at Davis, where I subsequently worked for four years as a post-graduate researcher in the Department of Agronomy and Range Sciences. My research has been on animal density and distribution, habitat selection, habitat restoration, interactions between wildlife and human infrastructure and activities, and conservation of rare and endangered species. I perform research on wildlife mortality caused by wind turbines, electric distribution lines, agricultural practices, and road traffic, among other human activities and structures. I authored numerous papers on special-status species issues. I served as Chair of the Conservation Affairs Committee for The Wildlife Society – Western Section. I am a member of The Wildlife Society and the Raptor Research Foundation, and I've been a part-time lecturer at California State University, Sacramento. I was Associate Editor of wildlife biology's premier scientific journal, The Journal of Wildlife Management, as well as of Biological Conservation, and I was on the Editorial Board of Environmental Management. I have performed wildlife surveys in California for thirty-three years, including at many proposed project sites. My CV is attached.

SITE VISITS

I twice visited the Parnassus Campus Hospital site and the Mount Sutro Open Space Reserve including Aldea Housing. I included Mount Sutro Open Space Reserve in my visits because it would be both a source and destination of flying birds at risk of colliding with the proposed new building, so it was important to identify as many of the bird species that occur there as possible within the survey time available. I visited for 3.5 hours starting at 08:17 hours on 20 August 2020, and for 3.57 hours starting at 09:14 hours on 16 July 2021. During both visits, the Marine Layer dominated the sky until the last 90 minutes or so. I surveyed on foot, using binoculars to scan for wildlife. My reporting of my first visit also appears in my comment letter of 1 September 2020 regarding the proposed Comprehensive Parnassus Heights Plan. 78

The forested areas east and south of the proposed project site supports many Allen's and Anna's hummingbirds (Photos 1 and 2). I saw Downy woodpeckers and Nuttall's woodpeckers (Photos 3 and 4), pygmy nuthatches and common ravens (Photos 5 and 6), Wilson's warblers and song sparrows (Photos 7 and 8), dark-eyed juncos and house finches (Photos 9 and 10), Pacific wrens (Photo 11), American robins and chestnut-backed chickadees (Photos 12 and 13), and red-masked parakeets (Photo 14). There were many fledgling birds.

78 cont.



Photos 1 and 2. *Allen's hummingbird (above) and Anna's hummingbird (right) in Mount Sutro Open Space Reserve, 16 July 2021. As found at the nearby California Academy of Sciences Building, these species are highly vulnerable to window collision mortality (Kahle et al. 2016).*

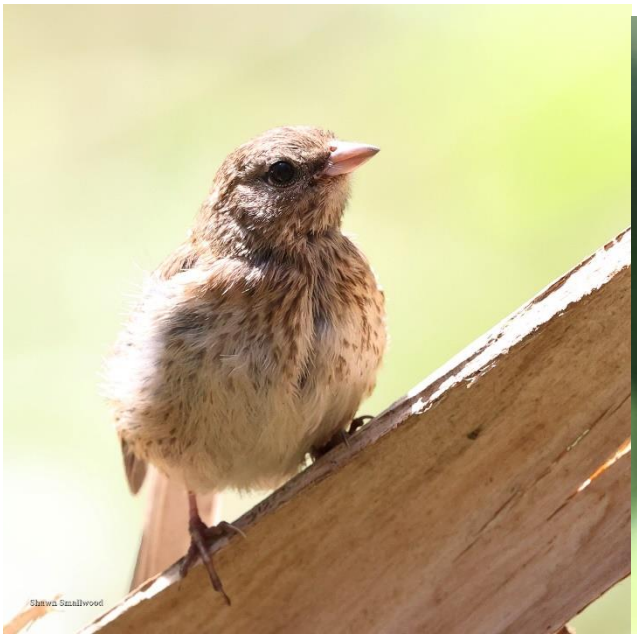
Photos 3 and 4. *Downy woodpecker (left) and Nuttall's woodpecker (right) on the Mount Sutro Open Space Reserve, 16 July 2021 and 20 August 2020.*

Photos 5 and 6. *Pygmy nuthatch (left) and common raven (right) on the Mount Sutro Open Space Reserve just east of the proposed hospital site, 20 August 2020.*

78 cont.

Photos 7 and 8. *Wilson's warbler (left) and song sparrow (right) on the Mount Sutro Open Space Reserve, 20 August 2020 and 16 July 2021.*

78 cont.



Photos 9 and 10. *Dark-eyed junco (left) and house finch (right) on the Mount Sutro Open Space Reserve, 16 July 2021.*

Photo 11. *Pacific wren on the Mount Sutro Open Space Reserve, 16 July 2021.*

78 cont.

Photos 12 and 13. *American robin finch (left) and chestnut-backed chickadee with worm (right) on the Mount Sutro Open Space Reserve, 16 July 2021.*

Photo 14. *Red-masked parakeets in intense social drama on the Mount Sutro Open Space Reserve, 16 July 2021.*

Between my two visits, I detected at least 39 species of vertebrate wildlife, but the survey outcomes of Golden Gate Audubon Society (GGAS 2021) added 32 species for a total 71 species detected recently by biologists (Table 1). Thirteen (18%) of the species detected are special-status species and only 4 non-native species. If the Reserve was surveyed over several years, the number of bird species would likely far exceed the 71 species GGAS and I detected altogether. eBird and iNaturalist records further indicate a long list of species use Mount Sutro Open Space Reserve and the Parnassus Campus (Table 2), including 48 special-status species of birds and Monarchs. The site is richer in bird species than my surveys and those of GGAS indicate at face value.

78 cont.

Table 1. *Species of wildlife observed by Golden Gate Audubon Society during March-December 2019 and March-December 2020 and by myself on 20 August 2020 and 16 July 2021.*

Species	***Scientific name***	Status[1]	GGAS 2019	GGAS 2020	KSS 2020	KSS 2021
California gull	*Larus californicus*	BCC, TWL				X
Cooper's hawk	*Accipiter cooperii*	TWL, BOP	X			
Red-tailed hawk	*Buteo jamaicensis*	BOP	X		X	X
Red-shouldered hawk	*Buteo lineatus*	BOP	X	X	X	X
Peregrine falcon	*Falco peregrinus*	CFP, BOP			X	X
Band-tailed pigeon	*Patagioenas fasciata*		X			
Mourning dove	*Zenaida macroura*		X			
Rock pigeon	*Columba livia*	Non-native	X		X	
Red-masked parakeet	*Psittacara erythrogenys*	Non-native		X		X
Anna's hummingbird	*Calypte anna*		X	X	X	X
Rufous hummingbird	*Selasphorus rufus*	BCC		X		
Allen's hummingbird	*Selasphorus sasin*	BCC	X	X		X
Northern flicker	*Colaptes auratus*		X			
Downy woodpecker	*Dryobates pubescens*		X	X		X
Hairy woodpecker	*Picoides villosus*		X	X		X
Nuttall's woodpecker	*Picoides nuttallii*	BCC		X	X	X
Acorn woodpecker	*Melanerpes formicivorus*			X	X	X
Black phoebe	*Sayornis nigricans*		X	X		
Pacific-slope flycatcher	*Empidonax difficilis*		X			
Olive-sided flycatcher	*Contopus cooperi*	BCC, SSC2	X			
Willow flycatcher	*Empidonax traillii*	BCC, CE	X			
European starling	*Sturnus vulgaris*	Non-native				X
Warbling vireo	*Vireo gilvus*			X		X
Hutton's vireo	*Vireo huttoni*		X	X		
Cedar waxwing	*Bombycilla cedrorum*		X			
Steller's jay	*Cyanocitta stelleri*		X	X	X	X
California scrub-jay	*Aphelocoma californica*		X		X	X
American crow	*Corvus Brachyrhynchos*			X		X
Common raven	*Corvus corax*		X	X	X	X

78 cont.

Species	***Scientific name***	Status[1]	GGAS 2019	GGAS 2020	KSS 2020	KSS 2021
Chestnut-backed chickadee	*Poecile rufescens*		X	X	X	X
Red-breasted nuthatch	*Sitta canadensis*		X			
Pygmy nuthatch	*Sitta pygmaea*		X	X	X	
Brown creeper	*Certhia americana*		X			
Pacific wren	*Thryomanes pacificus*		X	X	X	X
House wren	*Troglodytes aedon*			X		
Oak titmouse	*Baeolophus inorntus*	BCC				X
Bushtit	*Psaltriparus minimus*		X	X		X
Ruby-crowned kinglet	*Regulus calendula*		X	X	X	
Blue-gray gnatcatcher	*Polioptila caerulea*			X		
Northern mockingbird	*Mimus polyglottos*					X
Swainson's thrush	*Catharus ustulatus*		X			
Hermit thrush	*Catharus guttatus*		X	X		
Varied thrush	*Ixoreus naevius*		X	X		
American robin	*Turdus migratorius*		X	X	X	X
Yellow warbler	*Setophaga petechia*	SSC2, BCC	X	X	X	X
Nashville warbler	*Leiothlypis ruficapilla*			X		
Northern parula	*Setophaga americana*			X		
Black-throated gray warbler	*Setophaga nigrescens*			X		
Yellow-rumped warbler	*Setophaga coronata*		X	X		
Townsend's warbler	*Setophaga townsendi*		X	X		
Orange-crowned warbler	*Oreothlypis celata*		X	X		X
Wilson's warbler	*Wilsonia pusilla*		X	X	X	X
California towhee	*Melozone crissalis*		X	X		X
Spotted towhee	*Pipilo maculatus*		X	X		
House sparrow	*Passer domesticus*	Non-native			X	X
White-crowned sparrow	*Zonotrichia leucophrys*		X	X		
Golden-crowned sparrow	*Zonotrichia atricapilla*		X	X		
Lincoln's sparrow	*Melospiza lincolnii*				X	X
Song sparrow	*Melospiza melodia*		X	X	X	X
Fox sparrow	*Passerella iliaca*		X	X		

78 cont.

Species	***Scientific name***	Status[1]	GGAS 2019	GGAS 2020	KSS 2020	KSS 2021
Dark-eyed junco	*Junco hyemalis*		X	X	X	X
House finch	*Haemorhous mexicanus*		X	X	X	X
Purple finch	*Haemorhous purpureus*		X			
Lesser goldfinch	*Spinus psaltria*		X	X		X
American goldfinch	*Spinus tristis*				X	
Brown-headed cowbird	*Molothrus ater*			X		
Black-headed grosbeak	*Pheucticus melanocephalus*			X		
Western tanager	*Pirnaga ludoviciana*		X	X		
Summer tanager	*Piranga rubra*	SSC1		X		
Deer mouse	*Peromyscus maniculatus*					X
Western gray squirrel	*Sciurus griseus*				X	X

[1] BCC = US Fish and Wildlife Serv ice's Birds of Conservation Concern, CE = California Endangered, CFP = California Fully Protected, SSC2 = California Species of Special Concern priority level 2, FGC 3503.5 = California Department of Fish and Wildlife Code -- Birds of prey.

78 cont.

Table 2. *eBird (https://eBird.org) reports of special-status species near the project site and species reported as window-collision victims at the nearby California Academy of Sciences (CAS) buildings (Kahle et al. 2016).*

Species	Scientific name	Status[1]	Occurrences		Number counted at CAS study		Known window deaths
			EIR likelihood	eBird or site visits	As window deaths	Alive in survey plots	
Monarch	*Danaus plexippus*	CE	Moderate	Very close			
Western grebe	*Aechmophorus occidentalis*	BCC		Very close			
Clark's grebe	*Aechmophorus clarki*	BCC		Nearby			
American white pelican	*Pelacanus erythrorhynchos*	SSC1		Very close			
Brown pelican	*Pelecanus occidentalis californicus*	CFP		Very close			
Double-crested cormorant	*Phalacrocorax auratus*	TWL		On site			
Willet	*Tringa semipalmata*	BCC		Very close			
California gull	*Larus californicus*	BCC, TWL		On site			
Western gull	*Larus occidentalis*	BCC		On site		4	
Heermann's gull	*Larus heermanni*	BCC		Very close			
Caspian tern	*Hydroprogne caspia*	TWL		On site			
Elegant tern	*Thalasseus elegans*	BCC		Very close			
Osprey	*Pandion haliaetus*	TWL, BOP		On site			
Red-tailed hawk	*Buteo jamaicensis*	BOP		On site		1	Yes
Ferruginous hawk	*Buteo regalis*	TWL, BOP		Very close			
Swainson's hawk	*Buteo swainsoni*	CT, BCC, BOP		Very close			
Red-shouldered hawk	*Buteo lineatus*	BOP		On site		1	Yes
Rough-legged hawk	*Buteo lagopus*	BOP		Very close			Yes
Sharp-shinned hawk	*Accipiter striatus*	BOP, TWL		On site			Yes

78 cont.

Species	Scientific name	Status[1]	Occurrences		Number counted at CAS study		Known window deaths
			EIR likelihood	eBird or site visits	As window deaths	Alive in survey plots	
Cooper's hawk	*Accipiter cooperi*	BOP, TWL		On site			Yes
Northern harrier	*Circus cyaneus*	BCC, SSC3, BOP	Absent	On site			
White-tailed kite	*Elanus leucurus*	CFP, TWL, BOP	Low	Very close			
American kestrel	*Falco sparverius*	BOP		Very close			Yes
Merlin	*Falco columbarius*	BOP, TWL		On site			Yes
Peregrine falcon	*Falco peregrinus*	CFP, BCC	Moderate	On site			Yes
Mourning dove	*Zenaida macroura*			On site	6	3	Yes
Great-horned owl	*Bubo virginianus*	BOP		On site		1	Yes
Long-eared owl	*Asio otus*	SSC3, BOP		Very close			Yes
Short-eared owl	*Asio flammeus*	SSC3, BOP	Low	Very close			Yes
Western screech-owl	*Megascops kennicotti*	BOP		Nearby			Yes
Barn owl	*Tyto alba*	BOP		On site			Yes
Vaux's swift	*Chaetura vauxi*	SCC2		Very close			
Anna's hummingbird	*Calypte anna*			On site	131	256	Yes
Allen's hummingbird	*Selasphorus sasin*	BCC		On site	37	29	Yes
Costa's hummingbird	*Calypte costae*	BCC		Nearby	1	0	Yes
Rufous hummingbird	*Selasphorus rufus*	BCC		On site	4	0	Yes
Nuttall's woodpecker	*Picoides nuttallii*	BCC		On site		13	
Pacific-slope flycatcher	*Empidonax difficilis*			On site	1	5	Yes
Olive-sided flycatcher	*Contopus cooperi*	SSC2		On site			
Willow flycatcher	*Empidonax traillii*	CE, BCC		On site			
Black phoebe	*Sayornis nigricans*			On site	3	34	Yes
Oak titmouse	*Baeolophus inornatus*	BCC		On site			Yes

78 cont.

Species	Scientific name	Status[1]	Occurrences		Number counted at CAS study		Known window deaths
			EIR likelihood	eBird or site visits	As window deaths	Alive in survey plots	
Chestnut-backed chickadee	*Poecile rufescens*			On site	1	203	Yes
Wrentit	*Chamaea fasciata*	BCC		Very close			
Bushtit	*Psaltriparus minimus*			On site	1	399	Yes
Brown creeper	*Certhia americana*			On site	1	52	Yes
Pygmy nuthatch	*Sitta pygmaea*			On site	1	242	Yes
Loggerhead shrike	*Lanius ludovicianus*	BCC, SSC2		Regional			
Purple martin	*Progne subis*	SSC2		Very close			Yes
Bank swallow	*Riparia riparia*	CT	Low	Nearby			Yes
California thrasher		BCC		Very close			
Swainson's thrush	*Catharus ustulatus*			On site	1	1	Yes
Hermit thrush	*Catharus guttatus*			On site	8	82	Yes
American robin	*Turdus vulvaris*			On site	3	389	Yes
Warbling vireo	*Vireo gilvus*			On site	1	5	Yes
Yellow-rumped warbler	*Setophaga coronata*			On site	7	92	Yes
Orange-crowned warbler	*Oreothlypis celata*			On site	2	29	Yes
Townsend's warbler	*Setophaga townsendi*			On site	3	101	Yes
Wilson's warbler	*Cardellina pusilla*			On site	3	11	Yes
Yellow warbler	*Setophaga petechia*	SSC2, BCC		On site	7	18	Yes
San Francisco common yellowthroat	*Geothlypis trichas sinuosa*	SSC3, BCC	Absent	Very close	3	0	Yes
Yellow-breasted chat	*Icteria virens*	SSC3		Very close			Yes
Song sparrow	*Melospiza melodia*			On site	5	435	Yes

78 cont.

Species	Scientific name	Status[1]	Occurrences		Number counted at CAS study		Known window deaths
			EIR likelihood	eBird or site visits	As window deaths	Alive in survey plots	
Golden-crowned sparrow	*Zonotrichia atricapilla*			On site	3	230	Yes
White-crowned sparrow	*Zonotrichia leucophrys*			On site	1	249	Yes
Savannah sparrow	*Passerculus sandwichensis*			On site	2	0	Yes
Lincoln's sparrow	*Melospiza lincolnii*			On site	3	35	Yes
Fox sparrow	*Passerella iliaca*			On site	6	152	Yes
Dark-eyed junco	*Junco hyemalis*			On site	22	510	Yes
California towhee	*Melozone crissalis*			On site	1	92	Yes
Bullock's oriole	*Icterus bullockii*	BCC		On site			
Brown-headed cowbird	*Molothrus ater*			On site	1	39	Yes
Red-winged blackbird	*Agelaius phoeniceus*			On site	1	261	Yes
Brewer's blackbird	*Euphagus cyanocephalus*			On site	25	1027	Yes
Tricolored blackbird	*Agelaius tricolor*	CT, BCC		Very close		15	
House finch	*Haemorhous mexicanus*			On site	5	213	Yes
Lesser goldfinch	*Spinus psaltria*			On site	1	44	Yes
Lawrence's goldfinch	*Carduelis lawrencei*	BCC		Very close			

78 cont.

[1] Listed as BCC = U.S. Fish and Wildlife Service Bird Species of Conservation Concern, CT or CE = California threatened or endangered, CFP = California Fully Protected (CDFG Code 3511), BOP = California Fish and Game Code 3503.5 (Birds of Prey), and SSC1, SSC2 and SSC3 = California Bird Species of Special Concern priorities 1, 2 and 3, respectively, and TWL = Taxa to Watch List (Shuford and Gardali 2008).

CURRENT ENVIRONMENTAL SETTING

The first step in analysis of potential project impacts to biological resources is to accurately characterize the existing environmental setting, including the species that use the site, their relative abundances, how they use the site, key ecological relationships, and known and ongoing threats to those species with special status. A reasonably accurate characterization of the environmental setting can provide the baseline against which to analyze project impacts. Methods to achieve this first step should include surveys of the site for biological resources and reviews of literature, databases and local experts for documented occurrences of special-status species. In this case, there was no survey of the site for biological resources and the other essential steps were left incomplete. Herein I provide additional characterization of the wildlife community as a component of the current environmental setting, including the identification of special-status species likely to use the site at one time or another, and including the species using the Mount Sutro Open Space Reserve. The wildlife community of Mount Sutro Open Space Reserve is of critical importance to the proposed project because it includes the birds that would be put at risk of collision with the new building.

The DEIR determines the occurrence likelihoods of only a few special-status species, i.e., 7 species in Table 2. I expect that determinations of occurrence likelihood would have been made for many more special-status species had the consulting biologists completed surveys at and around the project site. Had surveys been completed, those biologists likely would have seen at least some of the 39 species I saw at the project site and within the adjacent Mount Sutro Open Space Reserve. I detected 8 special-status species of vertebrate wildlife, only 1 of which was considered in the DEIR. The DEIR determines that peregrine falcon has a moderte likelihood of occurrence, but I saw it looking over Mount Sutro Open Space Reserve both times I surveyed there. 79

The DEIR makes no mention of my findings from my first survey, which I reported in my comment letter of 1 September 2020 regarding the Comprehensive Parnassus Heights Plan. Nor does the DEIR mention the findings of surveys performed by Golden Gate Audubon Society on behalf of University of California, San Francisco (GGAS 2020, 2021). Between the GGAS surveys and mine, we detected 71 species including 13 with special status. Only 1 of these 13 special-status species is assigned a likelihood of occurrence determination in the DEIR, and that is peregrine falcon. The DEIR fails to sufficiently report findings that bear on the accurate characterization of the current environmental setting.

The DEIR reports documentation of 99 bird species reported on the project site or within Mount Sutro Open Space Reserve. I expect that many of the species included in the tally of 99 are special-status species, but the DEIR reports only the tally and not which species have been documented there. My Table 2 reports some of the 99 species cited by the DEIR. The DEIR should be revised to include full documentation of what was found on eBird as well as what was found by me and GGAS (2020, 2021).

Regarding my surveys, there were only so many species I was likely to detect within the short time I had available to perform visual-scan surveys on 20 August 2020 and 16 July

2021. As would be the case for any reconnaissance-level survey, the time I could commit to my survey was grossly short of the time needed to sufficiently inventory the species that use the area. Observers are imperfect at detecting all the species that occur within their surveyed space, and not all of the species that would occur in the surveyed space would occur there during the period of the observer's survey. However, one can model the pattern in species detections during a survey as a means to estimate the number of species that used the site but were not detected during the survey. To support such a modeling effort, the observer needs to record the times into the survey when each species was first detected. Cumulative first detections increase with increasing survey time, but eventually with diminishing returns (Figure 1). (Minutes into the survey can be thought of as person-minutes, thereby constraining model predictions to the environmental conditions experienced during the time period of the survey.) This modeling approach is useful for more realistically representing the species richness of the site at the time of the survey, but it cannot represent the species richness throughout the year or across multiple years because many species are seasonal or even multi-annual in their movement patterns and occupation of habitat.

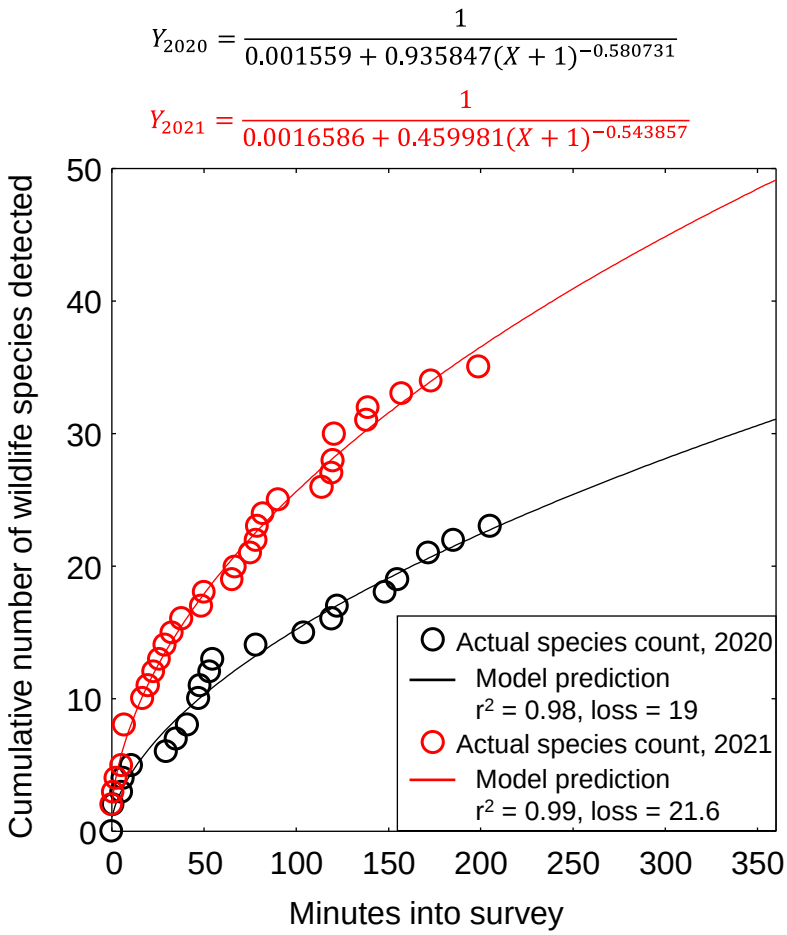


Figure 1. *Actual and predicted relationships between the number of vertebrate wildlife species detected and the elapsed survey time based on my visual-scan surveys on 20 August 2020 and 16 July 2021. Note that the relationships would differ if the surveys were based on another method or during another season. Also note that the cumulative number of vertebrate species across all methods, times of day, and seasons would increase substantially.*

79 cont.

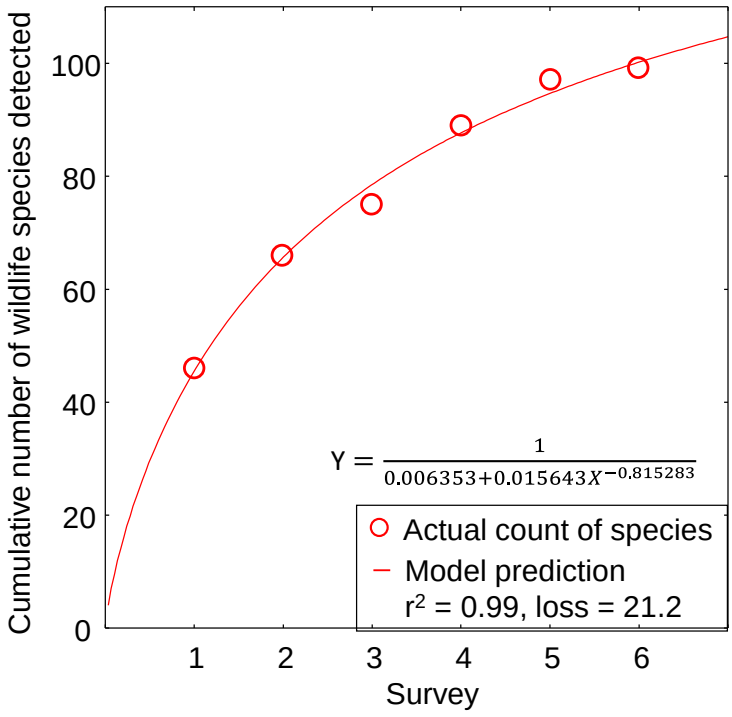
I could have detected many more species than predicted had I also performed surveys at different times of day/night to detect nocturnal and crepuscular species with appropriate methods and technology, or had I performed surveys in different seasons

and years to detect migrants and species with multi-annual cycles of abundance. My reconnaissance-level surveys inform me that the site is richer in wildlife than the 39 species I detected and the 71 species GGAS (2021) and I detected there so far, but also that the environmental setting of the project remains insufficiently characterized as foundation for analysis of impacts to special-status species. A more realistic representation of species richness at the site could be obtained by simply repeating visual-scan surveys on various dates through the year.

As a case in point, I repeated visual-scan surveys 6 times over the period of one year at a proposed project site in Rancho Cordova, California Survey outcomes ranged 40 to 67 species per survey, but a least-squares regression model that I fit to the cumulative number of species detections predicted that 157 species of vertebrate wildlife would eventually be detected by continuing to repeat the visual-scan surveys (Figure 2). Repeated surveys achieved diminishing returns, but they were necessary to document the occurrences of the scarcer and more cryptic species. Given the example illustrated in Figure 2, and assuming the pattern of survey returns is robustly represented by Figure 2, the 39 species I detected after my two surveys at the project site likely represented 42% of the species likely to be detected after six visual-scan surveys. With five more repeat surveys, I would likely detect $^{39}/_{0.42} = 93$ species of vertebrate wildlife at the site. But these predictions are based on one site where I measured the outcomes of repeat surveys. It would help to know the robustness of the pattern of cumulative species detections with increasing survey time, and it would help to represent species richness added with surveys in multiple seasons.

79 cont.

Figure 2. *Cumulative number of species detected as a function of the number of visual-scan surveys performed through one year at one site near Sacramento, California.*



As part of my research, I completed a much larger survey effort across 167 km² of annual grasslands of the Altamont Pass Wind Resource Area, where from 2015 through 2019, I

performed 721 1-hour visual-scan surveys, or 721 hours of surveys, at 46 stations. I used binoculars and otherwise the methods were the same as the methods I use for surveys at proposed project sites. At each of the 46 survey stations, I tallied new species detected with each sequential survey at that station, and then related the cumulative species detected to the hours (number of surveys, as each survey lasted 1 hour) used to accumulate my counts of species detected. I used combined quadratic and simplex methods of estimation in Statistica to estimate least-squares, best-fit nonlinear models of cumulative species detected regressed on hours of survey (number of surveys) at the station: $\hat{R} = \frac{1}{1/a+b\times(Hours)^c}$, where $\hat{R}$ represented cumulative species richness detected. Coefficients of determination of model-fit ranged 0.88 to 1.00, with a mean of 0.97 (95% CI: 0.96, 0.98). I projected the predictions of each model to thousands of hours to find predicted asymptotes of wildlife species richness. The mean model-predicted asymptote of species richness was 57 after 11,857 hours of visual-scan surveys. I also averaged model predictions of species richness at each incremental increase of number of surveys, i.e., number of hours (Figure 3). On average I detected 20.8 species over the first 7 hours of surveys in the Altamont Pass, which composed 36.5 % of the total predicted species I would detect with a much larger survey effort. Note that this value is close to the 42% value I obtained from the Rancho Cordova project site that I used as my first example in Figure 2. Given the example illustrated in Figure 3, and assuming the pattern of survey results is much more robustly represented by Figure 3 than it was in Figure 2, the 39 species I detected after my 7 hours of survey in the project area likely represented 36.5% of the species to be detected after many more visual-scan surveys. With many more repeat surveys, I would likely detect $39/0.365 = 107$ species of vertebrate wildlife in the project area. Given the much greater robustness of the model derived from the Altamont Pass, it is 107 species of vertebrate wildlife that I predict would be detected at the site after repeat diurnal visual-scan surveys throughout a year.

79 cont.

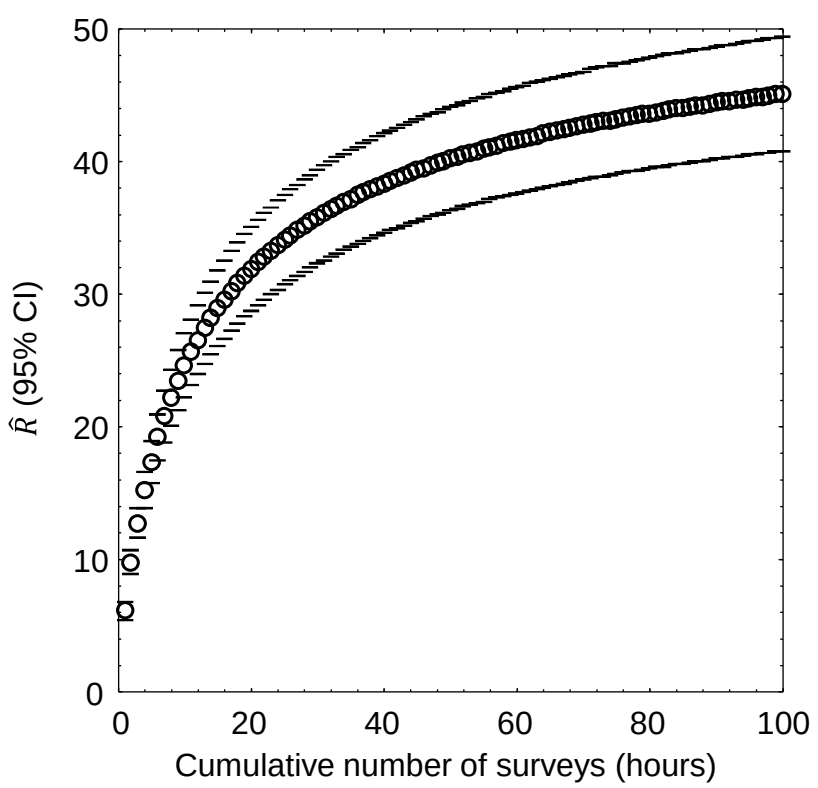


Figure 3. *Mean (95% CI) predicted wildlife species richness, $\hat{R}$, as a nonlinear function of hour-long survey increments across 46 visual-scan survey stations across the Altamont Pass Wind Resource Area, Alameda and Contra Costa Counties, 2015–2019.*

There is no question that a larger survey effort would result in a longer list of species documented to use the project site, thereby changing our understanding of the current environmental setting. But still unknown are which species have yet to be detected, how many of the yet-to-be-detected species are special-status species, and how many are listed species. The likelihood of detecting special-status species is typically lower than that of more common species. This difference can be explained by the fact that special-status species tend to be rarer and thus less detectable than common species. Special-status species also tend to be more cryptic, fossorial, or active during nocturnal periods when reconnaissance surveys are not performed. Another useful relationship from careful recording of species detections and subsequent comparative analysis is the probability of detection of listed species as a function of an increasing number of vertebrate wildlife species detected (Figure 4). (Note that listed species number fewer than special-status species, which are inclusive of listed species. Also note that I include California Fully Protected species and federal Candidate species as listed species.)

79 cont.

As was demonstrated in Figures 1 – 3, the number of species detected is largely a function of survey effort. Greater survey effort also increases the likelihood that listed species will be detected (which is the first tenet of detection surveys for special-status species). Based on the outcomes of 152 previous surveys that I performed at sites of proposed projects, my survey effort at the project site carried an 52% chance of detecting 1 listed species and a 17.5% chance of detecting 2 listed species, whereas the survey efforts of GGAS and myself combined, carried a 90% chance of detecting 1 listed species and a 58% chance of detecting 2 listed species. I detected peregrine falcon – a California Fully Protected species, and GGAS detected willow flycatcher, which is a

California Endangered species, so our survey efforts beat the odds. In summary, whereas a couple of reconnaissance-level surveys are incapable of detecting enough of the wildlife species that occur at a site to realistically characterize the site's wildlife community, they can inform of the species richness of the site and they can confirm the occurrences of those species that are detected. The current environmental setting is much richer in species than characterized in the DEIR, and this species richness is composed of more special-status species than determined by the DEIR.

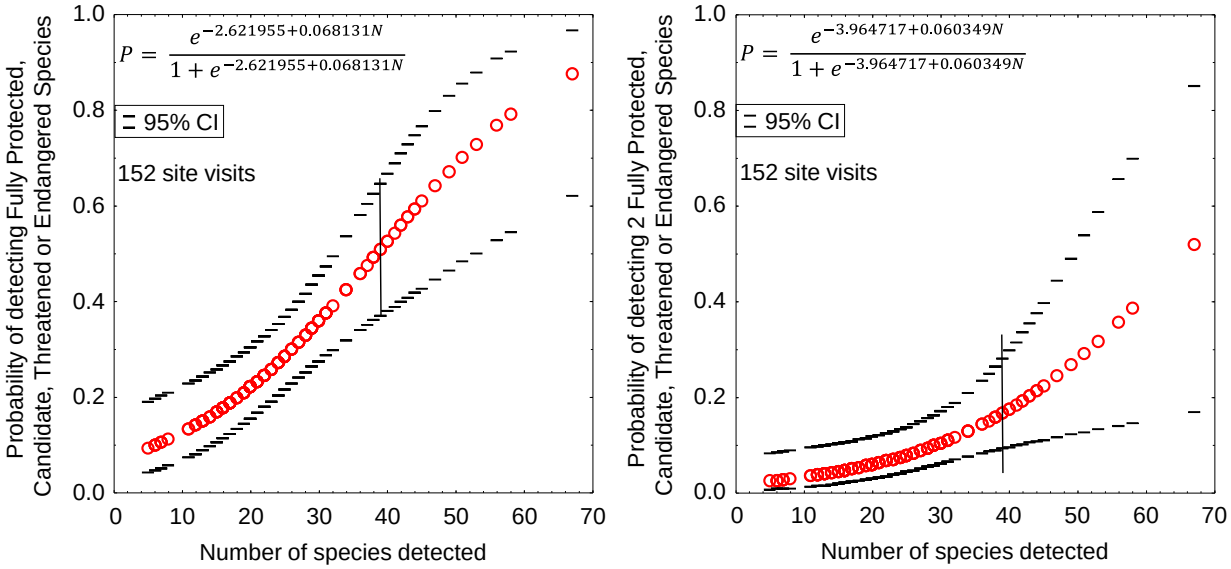


Figure 4. *Probability of detecting ≥1 Candidate, Threatened or Endangered Species of wildlife listed under California or federal Endangered Species Acts, based on survey outcomes logit-regressed on the number of wildlife species I detected during 152 site visits in California. The dashed vertical line represents the number of species detected by Chambers Group and the solid vertical line represents the number I detected.*

79 cont.

IMPACTS TO BIOLOGICAL RESOURCES

Determination of occurrence likelihoods of special-status species is not, in and of itself, an analysis of potential project impacts. An impacts analysis should consider whether and how a proposed project would affect members of a species, larger demographic units of the species, or the whole of a species. In the following, I analyze several types of impacts likely to result from the project, and none of which are analyzed adequately in the DEIR.

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HABITAT

The DEIR concludes the Project would result in no significant impacts to special-status species or their habitats. However, this conclusion neglects the aerosphere as habitat of volant wildlife. Habitat is defined by a species' use of the environment (Hall et al. 1997, Morrison et al. 1998, Smallwood 2002), and a major part of the environment that is used by birds is the aerosphere. Every species on Earth is morphologically adapted

through thousands of generations of life and death to exist within environmental media such as water, soil, air and other organisms. Many of the species at issue at the project site have wings, which is the morphological adaptation that suits these species to thrive by moving through the medium of the aerosphere, which is obviously a very important medium of life (Davy et al. 2017, Diehl et al. 2017). Indeed, an entire discipline of ecology has emerged to study this essential aspect of habitat – the discipline of aeroecology (Kunz et al. 2008). The DEIR neglects the aerosphere as an essential habitat element, which would be diminished by the project.

80 cont.

WILDLIFE MOVEMENT

Whereas the DEIR notes the importance of the project site within the Pacific Flyway and the importance of migratory stopover opportunities within Mount Sutro Open Space Reserve, it concludes that Mount Sutro Open Space Reserve is "disconnected and do not constitute a wildlife movement corridor" (page 4.3-3). The DEIR, however, adopts a CEQA standard of analysis that does not exist. The CEQA standard is whether a project will "Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors…" The primary phrase of the standard goes to wildlife movement regardless of whether the movement is channeled by a corridor or a linkage. And anyhow, corridors are typically regarded in science as human-created landscape structures intended to reduce the effects of habitat fragmentation, and only infrequently as a channelization of wildlife movement caused by landscape structure (Smallwood 2015).

Wildlife movement in a region is often diffuse rather than channeled (Runge et al. 2014, Taylor et al. 2011) unless anthropogenic changes have forced channeling or targeting of "island" patches of habitat (Smallwood 2015). Wildlife movement must include stopover opportunities for birds and bats (Taylor et al. 2011), and staging opportunities (Warnock 2010) during dispersal, migration or home range patrol. Many species of wildlife likely use Mount Sutro Open Space Reserve for movement across the region, because Mount Sutro Open Space Reserve is one of the last patches of open space remaining on the San Francisco Peninsula. Based on my brief observations at the site, multiple species do in fact use the site to move across the region. A gap between buildings allows for passage by birds flying to and from Mount Sutro Open Space Reserve. The project, with its large glass-facaded building, would block the passage between existing buildings as well as passage opportunities at much greater heights above ground. Southbound birds would be prevented from reaching their stopover and staging opportunities in Mount Sutro Open Space Reserve without having to fly greater distances to circumnavigate the building. Those birds flying in inclement weather or at night would be vulnerable to colliding with the building. The project, therefore, would interfere with wildlife movement in the region.

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BIRD-WINDOW COLLISION MORTALITY

Inserting such a large 15-story building onto the project site would intercept some portion of the birds flying through the project's airspace, and would otherwise interfere with movement of volant wildlife. The project's building would be inserted into the

82

aerosphere of the Pacific Flyway, which is used by millions of birds during migration. Furthermore, it would insert the building right in front of Mount Sutro, which is a major stopover destination of migratory birds. Further yet, based on depictions of the project in the DEIR, one of the most prominent features of the proposed building is its liberal use of structural glass on its facades, its interior lighting, its use of overhangs and open-cornered windows, and the windows' transparency and reflectance. The proposed elevated pedestrian crossing is enclosed in glass, which is consistent with pedestrian walkways have been elsewhere found to be exceptionally dangerous to birds. The building depicted in the DEIR appears to includes glass rails on balconies, again unnecessarily exposing birds to high collision risk. The project as depicted would introduce substantial bird collision hazards to an aerosphere that currently provides critically important habitat to birds, and which would impose lethal traps to flying birds.

Figure 5. DEIR depictions of the airspace used by birds without the project building (left) and with the building (right). Side by side, these images depict the massive blocking of bird movement to and from Mount Sutro Open Space Reserve that would result from the project.

82 cont.

Window collisions are often characterized as either the second or third largest source or human-caused bird mortality. The numbers behind these characterizations are often attributed to Klem's (1990) and Dunn's (1993) estimates of about 100 million to 1 billion bird fatalities in the USA, or more recently Loss et al.'s (2014) estimate of 365-988 million bird fatalities in the USA or Calvert et al.'s (2013) and Machtans et al.'s (2013) estimates of 22.4 million and 25 million bird fatalities in Canada, respectively. However, these estimates were likely biased too low, because they were based on opportunistic sampling, volunteer study participation, fatality monitoring by more inexperienced than experienced searchers, and usually no adjustments made for scavenger removals of carcasses before searchers could detect them (Bracey et al. 2016).

Millions of birds migrate along the Pacific Flyway. My observations during my visit to the site confirmed that birds fly through the airspace of the project, even during the nonmigratory season. Many special-status species of birds are known to the project area

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(Table 2). According to the scientific literature, most of the special-status species in Table 2 have been documented as window collision fatalities and are therefore susceptible to new structural glass installations (Supplemental Material to Basilio et al. 2020; Smallwood unpublished review). Many more species of migratory birds, newly protected by California's revised Fish and Game Code section 3513, have also been documented as window collision victims (Basilio et al. 2020).

83 cont.

The proposed building of the project can and should be designed to be safter to birds. Depictions of the building's façades are inconsistent with standards identified in Bird-Safe Guidelines I have reviewed. Depictions of the project show that large windows would reflect outdoor vegetation, and large transparent windows would give birds the false sense of open space. The DEIR provides no analysis of bird-window collision impacts. As I will show in the next section, many birds can be expected to be killed by the many large, expansive windows of the proposed project. The DEIR should be revised to include an analysis of this potential impact.

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Project Impact Prediction

While it is possible to predict the impacts caused by loss of aerial habitat and the energetic costs of birds having to navigate around the buildings, I am unable to make such predictions because the DEIR has failed to include surveys that would have allowed such prediction. However, I am prepared to predict bird-window collision mortality. By the time of these comments I had reviewed and processed results of bird collision monitoring at 213 buildings and façades for which bird collisions per m^2 of glass per year could be calculated and averaged (Johnson and Hudson 1976, O'Connell 2001, Somerlot 2003, Hager et al. 2008, Borden et al. 2010, Hager et al. 2013, Porter and Huang 2015, Parkins et al. 2015, Kahle et al. 2016, Ocampo-Peñuela et al. 2016, Sabo et al. 2016, Barton et al. 2017, Gomez-Moreno et al. 2018, Schneider et al. 2018, Loss et al. 2019, Brown et al. 2020, City of Portland Bureau of Environmental Services and Portland Audubon 2020, Riding et al. 2020). These study results averaged 0.073 bird deaths per m^2 of glass per year (95% CI: 0.042–0.102). This empirically founded collision mortality is in need of a predicted extent of windows in the project.

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The DEIR does not include a numerical prediction of the extent of windows in the project. I measured the sizes of windows depicted in the DEIR's renderings of the building, and otherwise estimated their numbers and extent. Including the elevated pedestrian walkway, I estimate total window extent would be 19,400 m^2.

Multiplying the project's extent of windows of 19,400 m^2 to the empirically predicted collision mortality of 0.073 bird deaths per m^2 of glass per year (95% CI: 0.042–0.102) would predict **1,418 bird deaths per year (95% CI: 842–1,994)**. The 100-year toll from this average annual fatality rate would be **141,814 bird deaths (95% CI: 84,196–199,432)**. These estimates would be perhaps 3 times higher after accounting for the proportions of fatalities removed by scavengers or missed by fatality searchers where studies have been performed. Collision fatalities would continue until the buildings are either renovated to reduce bird collisions or they come down. If the

project moves forward as proposed, and annually kills more than 1,400 birds protected by state and federal laws, then the project would cause significant unmitigated impacts. 85 cont.

Bird-Window Collision Factors

Below is a list of collision factors I found in the scientific literature, and which I suggest ought to be considered in a revised DEIR. Following this list are specific notes and findings taken from the literature and my own experience.

(1) Inherent hazard of a structure in the airspace used for nocturnal migration or other flights
(2) Window transparency, falsely revealing passage through structure or to indoor plants
(3) Window reflectance, falsely depicting vegetation, competitors, or open airspace
(4) Black hole or passage effect
(5) Window or façade extent, or proportion of façade consisting of window or other reflective surface
(6) Size of window
(7) Type of glass
(8) Lighting, which is correlated with window extent and building operations
(9) Height of structure (collision mechanisms shift with height above ground)
(10) Orientation of façade with respect to winds and solar exposure
(11) Structural layout causing confusion and entrapment
(12) Context in terms of urban-rural gradient, or surrounding extent of impervious surface vs vegetation
(13) Height, structure, and extent of vegetation grown near home or building
(14) Presence of birdfeeders or other attractants
(15) Relative abundance
(16) Season of the year
(17) Ecology, demography and behavior
(18) Predatory attacks or cues provoking fear of attack
(19) Aggressive social interactions

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(1) Inherent hazard of structure in airspace.—Not all of a structure's collision risk can be attributed to windows. Overing (1938) reported 576 birds collided with the Washington Monument in 90 minutes on one night, 12 September 1937. The average annual fatality count had been 328 birds from 1932 through 1936. Gelb and Delacretaz (2009) and Klem et al. (2009) also reported finding collision victims at buildings lacking windows, although many fewer than they found at buildings fitted with widows. The takeaway is that any building going up at the project site would likely kill birds, although mortality would increase with larger expanses of glass.

(2) Window transparency.—Widely believed as one of the two principal factors contributing to avian collisions with buildings is the transparency of glass used in windows on the buildings (Klem 1989). Gelb and Delacretaz (2009) felt that many of the collisions they detected occurred where transparent windows revealed interior vegetation.

(3) Window reflectance.—Widely believed as one of the two principal factors contributing to avian collisions with buildings is the reflectance of glass used in windows on the buildings (Klem 1989). Reflectance can deceptively depict open airspace, vegetation as habitat destination, or competitive rivals as self-images (Klem 1989). Gelb and Delacretaz (2009) felt that many of the collisions they detected occurred toward the lower parts of buildings where large glass exteriors reflected outdoor vegetation. Klem et al. (2009) and Borden et al. (2010) also found that reflected outdoor vegetation associated positively with collisions.

(4) Black hole or passage effect.—Although this factor was not often mentioned in the bird-window collision literature, it was suggested in Sheppard and Phillips (2015). The black hole or passage effect is the deceptive appearance of a cavity or darkened ledge that certain species of bird typically approach with speed when seeking roosting sites. The deception is achieved when shadows from awnings or the interior light conditions give the appearance of cavities or protected ledges. This factor appears potentially to be nuanced variations on transparency or reflectance or possibly an interaction effect of both of these factors.

(5) Window or façade extent.—Klem et al. (2009), Borden et al. (2010), Hager et al. (2013), Ocampo-Peñuela et al. (2016), Loss et al. (2019), Rebolo-Ifrán et al. (2019), and Riding et al. (2020) reported increased collision fatalities at buildings with larger reflective façades or higher proportions of façades composed of windows. However, Porter and Huang (2015) found a negative relationship between fatalities found and proportion of façade that was glazed.

86 cont.

(6) Size of window.—According to Kahle et al. (2016), collision rates were higher on large-pane windows compared to small-pane windows.

(7) Type of glass.—Klem et al. (2009) found that collision fatalities associated with the type of glass used on buildings. Otherwise, little attention has been directed towards the types of glass in buildings.

(8) Lighting.—Parkins et al. (2015) found that light emission from buildings correlated positively with percent glass on the façade, suggesting that lighting is linked to the extent of windows. Zink and Eckles (2010) reported fatality reductions, including an 80% reduction at a Chicago high-rise, upon the initiation of the Lights-out Program. However, Zink and Eckles (2010) provided no information on their search effort, such as the number of searches or search interval or search area around each building.

(9) Height of structure.—Except for Riding et al. (2020), I found little if any hypothesis-testing related to building height, including whether another suite of factors might relate to collision victims of high-rises. Some of the most notorious buildings are low-rise buildings.

(10) Orientation of façade.—Some studies tested façade orientation, but not convincingly. Some evidence that orientation affects collision rates was provided by

Winton et al. (2018). Confounding factors such as the extent and types of windows would require large sample sizes of collision victims to parse out the variation so that some portion of it could be attributed to orientation of façade. Whether certain orientations cause disproportionately stronger or more realistic-appearing reflections ought to be testable through measurement, but counting dead birds under façades of different orientations would help.

(11) Structural layout.—Bird-safe building guidelines have illustrated examples of structural layouts associated with high rates of bird-window collisions, but little attention has been directed towards hazardous structural layouts in the scientific literature. An exception was Johnson and Hudson (1976), who found high collision rates at 3 stories of glassed-in walkways atop an open breezeway, located on a break in slope with trees on one side of the structure and open sky on the other, Washington State University.

(12) Context in urban-rural gradient.—Numbers of fatalities found in monitoring have associated negatively with increasing developed area surrounding the building (Hager et al. 2013), and positively with more rural settings (Kummer et al. 2016).

(13) Height, structure and extent of vegetation near building.—Correlations have sometimes been found between collision rates and the presence or extent of vegetation near windows (Hager et al. 2008, Borden et al. 2010, Kummer et al. 2016, Ocampo-Peñuela et al. 2016). However, Porter and Huang (2015) found a negative relationship between fatalities found and vegetation cover near the building. In my experience, what probably matters most is the distance from the building that vegetation occurs. If the vegetation that is used by birds is very close to a glass façade, then birds coming from that glass will be less likely to attain sufficient speed upon arrival at the façade to result in a fatal injury. Too far away and there is probably no relationship. But 30 to 50 m away, and birds alighting from vegetation can attain lethal speeds by the time they arrive at the windows.

86 cont.

(14) Presence of birdfeeders.—Dunn (1993) reported a weak correlation ($r = 0.13$, $P < 0.001$) between number of birds killed by home windows and the number of birds counted at feeders. However, Kummer and Bayne (2015) found that experimental installment of birdfeeders at homes increased bird collisions with windows 1.84-fold.

(15) Relative abundance.—Collision rates have often been assumed to increase with local density or relative abundance (Klem 1989), and positive correlations have been measured (Dunn 1993, Hager et al. 2008). However, Hager and Craig (2014) found a negative correlation between fatality rates and relative abundance near buildings.

(16) Season of the year.—Borden et al. (2010) found 90% of collision fatalities during spring and fall migration periods. The significance of this finding is magnified by 7-day carcass persistence rates of 0.45 and 0.35 in spring and fall, rates which were considerably lower than during winter and summer (Hager et al. 2012). In other words, the concentration of fatalities during migration seasons would increase after applying seasonally-explicit adjustments for carcass persistence. Fatalities caused by collisions

into the glass façades of the project's building would likely be concentrated in fall and spring migration periods.

(17) Ecology, demography and behavior.—Klem (1989) noted that certain types of birds were not found as common window-caused fatalities, including soaring hawks and waterbirds. Cusa et al. (2015) found that species colliding with buildings surrounded by higher levels of urban greenery were foliage gleaners, and species colliding with buildings surrounded by higher levels of urbanization were ground foragers. Sabo et al. (2016) found no difference in age class, but did find that migrants are more susceptible to collision than resident birds.

(18) Predatory attacks.—Panic flights caused by raptors were mentioned in 16% of window strike reports in Dunn's (1993) study. I have witnessed Cooper's hawks chasing birds into windows, including house finches next door to my home and a northern mocking bird chased directly into my office window. Predatory birds likely to collide with the project's windows would include Peregrine falcon, red-shouldered hawk, Cooper's hawk, and sharp-shinned hawk.

86 cont.

(19) Aggressive social interactions.—I found no hypothesis-testing of the roles of aggressive social interactions in the literature other than the occasional anecdotal account of birds attacking their self-images reflected from windows. However, I have witnessed birds chasing each other and sometimes these chases resulting in one of the birds hitting a window.

For most of the known or suspected collision risk factors, the proposed project's design would either contribute amply to collision risk, or its contribution remains unknown due to insufficient reporting of existing environmental conditions and project design (Table 3). Focused study of birds in the area could reduce the uncertainty of potential project impacts. Such studies could make use of radar (Gauthreaux et al. 2008) or visual-scan surveys (Smallwood 2017). Key information useful for impacts assessment and mitigation would include intensity and timing of bird traffic, heights above ground, travel trajectories, and specific behaviors of birds in flight.

Window Collision Solutions

Given the magnitude of bird-window collision impacts, there are obviously great opportunities for reducing and minimizing these impacts going forward. Existing structures can be modified or retrofitted to reduce impacts, and proposed new structures can be more carefully sited, designed, and managed to minimize impacts. However, the costs of some of these measures can be high and can vary greatly, but most importantly the efficacies of many of these measures remain uncertain. Both the costs and effectiveness of all of these measures can be better understood through experimentation and careful scientific investigation. **Post-construction fatality monitoring should be an essential feature of any new building project**. Below is a listing of mitigation options, along with some notes and findings from the literature.

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Table 3. *Window collision risk factors, their weightings based on the scientific literature, and the level of risk introduced by the proposed project.*

Collision risk to volant wildlife		
Factor	**Weighting**	**Added by project**
Inherent hazard of structure	Universal	Amply
Window transparency	Very high	Amply
Window reflectance	Very high	Amply
Black hole or passage effect	High	Amply
Window or façade extent	Very high	Amply
Size of window	High	Amply
Type of glass	High	Amply
Lighting	High	Amply
Height of structure	High	Amply
Orientation of façade	Unknown	Unknown
Structural layout	High	Unknown
Context in urban-rural gradient	Likely high	Unknown
Height, structure and extent of vegetation near building	High	Amply
Presence of birdfeeders	Moderate	Unknown
Relative abundance	Uncertain	Amply
Season of the year	Nonspatial	Not applicable
Ecology, demography and behavior	Uncertain	Amply
Predatory attacks	Uncertain	Amply
Aggressive social interactions	Uncertain	Unknown

87 cont.

The environmental review of any new project should be informed by surveys of daytime and nocturnal flight activity. Such surveys can reveal the one or more façades facing the prevailing approach direction of birds, and these revelations can help prioritize where certain types of mitigation can be targeted. It is critical to formulate effective measures prior to construction, because post-construction options will be limited, likely more expensive, and probably less effective.

(1) Retrofitting to reduce impacts

(1A) Marking windows
(1B) Managing outdoor landscape vegetation
(1C) Managing indoor landscape vegetation
(1D) Managing nocturnal lighting

(1A) Marking windows.— Whereas Klem (1990) found no deterrent effect from decals on windows, Johnson and Hudson (1976) reported a fatality reduction of about 69% after placing decals on windows. In an experiment of opportunity, Ocampo-Peñuela et al. (2016) found only 2 of 86 fatalities at one of 6 buildings – the only building with windows treated with a bird deterrent film. At the building with fritted glass, bird collisions were 82% lower than at other buildings with untreated windows. Kahle et al. (2016) added external window shades to some windowed façades to reduce fatalities 82% and 95%. Brown et al. (2020) reported an 84% lower collision probability among fritted glass windows and windows treated with ORNILUX R UV. City of Portland

Bureau of Environmental Services and Portland Audubon (2020) reduced bird collision fatalities 94% by affixing marked Solyx window film to existing glass panels of Portland's Columbia Building. Many external and internal glass markers have been tested experimentally, some showing no effect and some showing strong deterrent effects (Klem 1989, 1990, 2009, 2011; Klem and Saenger 2013; Rössler et al. 2015).

Following up on the results of Johnson and Hudson (1976), I decided to mark windows of my home, where I have documented 5 bird collision fatalities between the time I moved in and 6 years later. I marked my windows with decals delivered to me via US Postal Service from a commercial vendor. I have documented no fatalities at my windows during the 10 years hence. In my assessment, markers can be effective in some situations.

87 cont.

(2) Siting and Designing to minimize impacts

(2A) Deciding on location of structure
(2B) Deciding on façade and orientation
(2C) Selecting type and sizes of windows
(2D) Designing to minimize transparency through two parallel façades
(2E) Designing to minimize views of interior plants
(2F) Landscaping to increase distances between windows and trees and shrubs

(3) Monitoring for adaptive management to reduce impacts

(3A) Systematic monitoring for fatalities to identify seasonal and spatial patterns
(3B) Adjust light management, window marking and other measures as needed.

CUMULATIVE IMPACTS ANALYSIS

The DEIR's assertion that mitigation for the project's direct impacts would prevent cumulative impacts implies that cumulative impacts are really just residual impacts of incomplete mitigation. If that was CEQA's standard, then cumulative effects analysis would be merely an analysis of mitigation efficacy. The DEIR's implied standard is not the standard of analysis of cumulative effects. CEQA defines cumulative impacts, and it outlines two general approaches for performing the analysis.

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An analysis of cumulative impacts to birds caused by window collisions is needed, especially in light of the recently documented 29% decline in bird abundance across North America over the last 48 years (Rosenberg et al. 2019). The proposed project alone is predicted to cause >1,400 bird deaths per year. These deaths would add to many thousands more killed by windows in San Francisco. Buildings already constructed in San Francisco must be killing large numbers of birds, considering the liberal use of glass in the City. The DEIR should be revised, and it should include an appropriate, serious analysis of cumulative impacts. It needs to address cumulative impacts from habitat fragmentation, and from collision mortality with glass facades.

MITIGATION

NHPH Mitigation Measure BIO-1a: Protection of Monarch Butterflies

The DEIR proposes preconstruction surveys for overwintering populations of Monarchs. But detection surveys are needed first to estimate potential impacts and to formulate appropriate avoidance, minimization and compensatory mitigation. These surveys are needed to inform the readers of the DEIR. Should the project go forward, the results of the detection surveys would also improve the efficacy of preconstruction take-avoidance surveys by directing survey personnel to where they would be most likely to find any animals in need of salvage or protection. The DEIR skips an important survey step. 89

NHPH Mitigation Measure BIO-1b: Protection of Nesting Birds

I concur with the measures to time construction outside the seasons of impacts to breeding animals, if feasible. I also concur with performing preconstruction surveys should construction have to take place during the breeding season. However, I must point out that preconstruction surveys would realistically detect only a very small fraction of bird nests across the project site and surrounding area within Mount Sutro Open Space Reserve. Birds are expert at hiding their nests, and there currently are many mature trees with dense foliage in which birds undoubtedly nest in the area. Finding more than a few of the bird nests would be unlikely. Furthermore, this measure would do nothing to diminish long-term project impacts to wildlife productivity; it would not prevent the loss of productive capacity from the many nest sites that occur in the project area today. Lastly, this measure is incomplete without a commitment to substantial compensatory mitigation. 90

NHPH Mitigation Measure BIO-1c: Protection of Roosting Bats

My comments regarding the efficacy of preconstruction surveys for nesting birds also applies to roosting bats. 91

NHPH Mitigation Measure BIO-1d: Worker Education

A worker awareness program should be implemented. I must note, however, that this measure would prevent few of the impacts I addressed in this comment letter. Most of the impacts would happen outside the control of the workers. Aware workers would not prevent loss of avian and bat access to the aerosphere, nor would they prevent bird collisions with windows. 92

NHPH Mitigation Measure BIO-2a: Prevention of Harm to Migrating Birds During Construction

I concur with the measures proposed to minimize harm to migrating birds during construction. I must point out that this benefit would be brief relative to the lifespan of the project. 93

NHPH Mitigation Measure BIO-2b: Bird-Safe Building Treatments

I concur with the implementation of bird-safe building design elements and the commitment to a 3-year post-construction monitoring program for bird fatalities. I am concerned, however, that the commitment to post-construction fatality monitoring appears on page 3-30 of the DEIR instead of in the section on mitigation beginning on page 4.3-21, where I expected to see it along with more details. Overall, the DEIR is short on details of the bird-safe building treatments. More importantly, the treatments that are proposed seem inconsistent with the design of the building that is presented in the DEIR. The DEIR presents a glass window-dominated building that appears to emphasize the very design elements that are thought to pose the greatest collision risks to birds. The DEIR's depictions of the building include expansive glass that is both transparent and reflective of planted trees. It shows corner windows that would give the false impression of unobstructed space for birds to attempt to fly through. It shows abundant use of overhangs and insets of windows into which many birds might seek cavities for roosting or sage passage. Relative to what is known of causal factors of bird-window collision mortality, the proposed building looks dangerous to birds.

The DEIR explains that an expert on bird-window collision hazards would be retained to help with bird-safe building treatments. The timing of this expert input would come too late, however. Most of the design elements are already in place, leaving the bird-safe design elements as mere rectification of impacts that would be caused by expansive windows, cornering and overhangs, interior lighting, and exterior landscaping that would draw birds to the zones of greatest collision risk. Glass rails should be removed from the project at the outset. Also, Mitigation Measure Bio-2b should be revised to commit at the outset to specific levels of implementation of fritted or etched glass. As written, Measure Bio-2b appears to leave ample room for minimizing the building's use of safer glass. 94

On page 3-30, the DEIR explains that "In consideration of the proposed New Hospital's proximity to the Reserve, UCSF would coordinate with a qualified ornithologist to incorporate design features into the New Hospital generally consistent with the City's Standards for Bird-Safe Buildings that would minimize the potential for bird strikes." This statement reveals that the University acknowledges the increased level of bird-window collision mortality due to the project's proximity to one of the last remaining patches of open space on the Peninsula. The circumstances of the project location heightens the danger of the project to birds, which is all the more reason why the design standards need to be incorporated into the building's architectural design at the outset, and not after the major design features have already been decided. Designing the building with bird safety in mind can save lots of birds as well as lots of money having to later retrofit the building to reduce collision mortality.

The DEIR should be revised after the building has been redesigned with input from qualified ornithologists. And rather than assuring that design standards would be "generally consistent with the City's *Standards for Bird-Safe Buildings*" (page 3-30), the revised DEIR should identify the specific design standards that would be implemented as well as any variations on those or other standards, as appropriate.

Science has advanced our understanding of bird-window collision mortality, so it would be understandable to implement the design standards with modifications. Whichever standards are applied, the DEIR needs to clearly describe them and to clearly explain why they are being applied, and these explanations need to be written into the mitigation section of the Biological Resources chapter rather than in the Project Description chapter of the DEIR.

The DEIR needs to be revised to provide much more detail about the three-year post-construction monitoring plan that is mentioned on page 3-30. It should state the minimum qualifications of the monitor, as well as standards of methodology and what would happen should collision mortality prove excessive.

94 cont.

RECOMMENDED MEASURES

Detection Surveys for Special-status Species

Protocol-level detection surveys are needed for the special-status species in Table 2. Additionally, to inform a revised DEIR, surveys for all wildlife are needed to inventory wildlife occurring within Mount Sutro Open Space Reserve. In order to effectively support the DEIR's needed impacts analysis from the resulting species inventory, and to most effectively measure impacts of the project post-construction, I recommend an impact-gradient design, whereby survey stations are sited at increasing distances along linear transects extending from the project site. Such a design can more effectively inform of the nearness of species to the project before the project goes forward, and it can measure the effects of the project on species occurrences and on species richness. I further recommend that the impact-gradient design be implemented before project construction to factor in before and after phases as experimental design elements. I suggest that these surveys would be ideally suite to graduate students or to Golden Gate Audubon Society, who has already been performing surveys in the Reserve for the University

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Guidelines on Building Design

If the project goes forward, it should adhere to the available guidelines prepared by American Bird Conservancy and New York and San Francisco. The American Bird Conservancy (ABC) produced an excellent set of guidelines that recommend actions to: (1) Minimize use of glass; (2) Placing glass behind some type of screening (grilles, shutters, exterior shades); (3) Using glass with inherent properties to reduce collisions, such as patterns, window films, decals or tape; and (4) Turning off lights during migration seasons (Sheppard and Phillips 2015). The City of San Francisco (San Francisco Planning Department 2011) also has a set of building design guidelines, based on the excellent guidelines produced by the New York City Audubon Society (Orff et al. 2007). The ABC document and both the New York and San Francisco documents provide excellent alerting of potential bird-collision hazards as well as many visual examples. The San Francisco Planning Department's (2011) building design guidelines are more comprehensive than those of New York City, but they could have gone further. For example, the San Francisco guidelines probably should have also covered scientific

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monitoring of impacts as well as compensatory mitigation for impacts that could not be avoided, minimized or reduced. 96 cont.

Fund Wildlife Rehabilitation Facilities

Compensatory mitigation ought also to include funding contributions to wildlife rehabilitation facilities to cover the costs of injured animals that will be delivered to these facilities for care. Most of the injuries will likely be caused by bird-window collisions and wildlife collisions with project-generated traffic. 97

Post-construction Monitoring

In the face of high uncertainty over the efficacies of candidate mitigation measures to minimize or reduce bird-window collision fatalities, post-construction fatality monitoring should be implemented in the context of a before-after, control-impact (BACI) experimental design. Monitoring as part of a BACI design would more quickly and more confidently reveal patterns of fatalities that can identify causal factors and test mitigation efficacy. It should begin immediately in the project area. Qualified monitors should be selected, and the monitors should make use of graduate students.

Understanding why wildlife fatalities are happening and how to reduce them requires high accuracy in fatality rate estimation. But understanding causal factors also requires behavior surveys performed by qualified behavioral ecologists, who would need to sample the project with sufficient survey effort and at sufficient spatial/temporal grain to discern avian reactions to project elements and to any experimental treatments applied to reduce fatalities. Fatality monitoring and behavior surveys can inform of the efficacies of mitigation measures that are implemented with appropriate tenets of experimental design (Sinclair and DeGeorge 2016). 98

A post-construction monitoring plan should be prepared, and it should be included with a revised DEIR. Consideration should be given to the desired avian carcass detection rate, because this rate would determine the speed at which fatality searches can be completed, the accuracy of fatality estimates, and the appropriate duration of fatality monitoring. It also affects the cost of the fatality monitoring effort. Below is a framework of a fatality monitoring plan that includes best practices:

1. Keep it simple;
2. Have a plan and a budget for responding to the discoveries of injured wildlife;
3. Ask university employees to leave carcasses alone;
4. Search all of the building perimeter and balconies where carcasses can land, or search a substantial randomized sample or a systematic sample with random starting points;
5. Delineate unsearchable areas due to hazards or other constraints;
6. If feasible, use leashed scent-detection dogs with skilled handlers (Smallwood et al. 2020);

7. Implement no more than one search interval, i.e., number of days between searches, but the search interval should be a targeted average rather than a strict time to provide flexibility to the scent-detection dog team;
8. Minimum monitoring duration should be 3 years;
9. Refrain from performing 'clearing searches' because they're ineffective and unnecessary;
10. Upon discovery of feathers, stop and search increasingly larger circles to determine whether more feathers can lead to the carcass;
11. Integrate carcass detection trials into routine fatality monitoring by randomly placing just-thawed, fresh-frozen carcasses of appropriate bird species onto the search areas at a rate of about 2.3 g/ha/year, where appropriate species means those likely to be killed by features of the project and include the full range of body sizes;
12. In carcass detection trials, place many more of the smallest birds because detections of those trial carcasses are necessary but more rarely achieved;
13. Mark trial carcasses discreetly and safely with regard to scavengers – snipping toes and the ends of flight feathers works well;
14. Weigh trial carcasses just prior to placement;
15. Keep searchers blind to the trial placements by using a disciplined trial administrator who places carcasses while searchers are not onsite and who leaves no obvious evidence of each visit other than the carcass itself;
16. Upon placement, drop each trial carcass from waist height, and then photograph and map the location with high-end GPS and take notes of the location;
17. Leave all fatality and trial carcasses in the field, thereafter monitoring subsequent detections of the same carcasses;
18. All carcasses in integrated trials are either found or not found, so do not attempt to separate trials for searcher detection and carcass persistence;
19. Count fatalities discovered incidentally to routine fatality monitoring, including those found beyond the maximum search radius of a surveyed area, but omit those found in areas not selected for sampling (if sampling was used instead of census);
20. Map and photograph all fatalities and trial carcasses every time they are detected;
21. Enter data into electronic spreadsheet daily and share data with supervisor no less often than weekly to identify and resolve problems in a timely manner;
22. Identify all remains to species, so include sufficient budget for visiting museums or experts to achieve this objective (every species misidentification adds error to two species – to the species misidentified and to the species not identified);
23. See Smallwood et al. (2018) for details on how to use the data in a simple estimator;
24. Repeat the monitoring effort 10 years after the first monitoring effort;
25. Share data and reports publicly and require peer-review by independent party.

98 cont.

Below is a framework for behavior surveys that aim to inform of causal factors via rates of certain risky behaviors and collision near-misses:

99

1. Use behavioral ecologists to either perform behavior surveys or to train the biologists who would perform the surveys;

2. Perform 1-hour visual scan surveys focused on each building facade that is also searched by scent-detection dogs per fatality monitoring;
3. Record positions of behavior survey stations;
4. Alter start times randomly from dawn until dusk, but not while the fatality searchers are present;
5. Record observations into a handheld digital voice recorder, which are to be transcribed to an electronic spreadsheet later the same day;
6. Record significant events to handheld printed photos of the building facade, where significant events include collisions, near-misses and other reactions to teh building, as well as uses made of project elements by birds (perching, nesting);
7. Record species of birds visiting the plot, flock size, behavior, height above ground, flight path (record on map) and time on plot;
8. Record wind speed and direction, temperature and weather conditions at beginning and end of each survey;
9. Digitize data recorded on photos for spatial analysis using GIS or other means;
10. See methods in Smallwood (2017).

99 cont.

I further recommend that nocturnal surveys be performed. I used a FLIR T620 thermal-imaging camera with an 88.9 mm telephoto lens for this purpose, but other options are available. I recommend surveys are performed within 3 hours after dark to determine whether collisions might be happening at night rather than during the day. Such surveys allowed me to witness actual collisions with wind turbines, but more importantly many near-misses (Smallwood and Bell 2020a,b). The same should be done for nocturnal birds flying around the building.

100

As mentioned in recommended fatality monitoring practice 25, above, transparency is critically important. Peer review is essential, and so is the sharing of data in a timely manner.

101

Thank you for your attention,

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Shawn Smallwood, Ph.D.

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Photo 15. *Song sparrow in Mount Sutro Open Space Reserve, 16 July 2021.*

EXHIBIT 3

Patrick M. Soluri
SOLURI MESERVE
510 8TH Street
Sacramento, CA 95814

RE: UCSF New Hospital at Parnassus Heights
Comments on Geology and Soils

Dear Mr. Soluri:

I reviewed the draft Environmental Impact Report ("DEIR") for the UCSF New Hospital at Parnassus Heights. This letter transmits my comments as to DEIR Chapter 4.6 (Geology and Soils).

Drilling deep borings for construction of new buildings can induce and trigger seismic waves causing physical damage to surrounding infrastructure, edifices and homes through ground motion. The potential exists for drill borings to cause ground shaking or seismic-related ground failure in rock and the settlement of soils. Data must be collected in order to assess the significance of the potential impact to nearby residences.

Use of a microseismic array is necessary to obtain ambient ground motion data for a large construction site such as this multi-story hospital that will reside on sedimentary rock, surrounded by neighborhoods and city infrastructure. Data collected through a microseismic array will allow for detection of ambient motion from the construction site for understanding wave propagation mechanisms that may cause ground motion. Seismic waves from downhole borings can propagate sustained homogeneous shear waves in unconsolidated sediments.

The classical case of seismic waves occurs where a pulse of energy propagates across a planar fracture in rock. Microseismicity is often induced when drilling propagates energy downwards in borings. Based on the trends in stress and depth in a hole, the downward propagation of microseismicity is typically observed across a fracture network of any case study of rock. Trends in stress and depth can be responsible for propagation of these pulses of energy across a natural fracture network and affect the in-situ stress state in rock or anything keyed into the rock (e.g., foundations). Microseismicity observations do not necessarily coincide with one single planar fracture formed by drilling in rock, rather a network of fractures can be induced as well as opening further fractures in pre-existing fractures.

In construction settings where, as here, there is the possibility of affecting nearby dwellings, microseimic monitoring arrays are necessary to ensure detection of a seismic-induced event of some minimum size. The DEIR does not appear to require this, and so significant impacts related to ground shaking may remain undisclosed.

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Regards,

Andrew Coleman, Ph.D., C.P.G., P.G.

Structural Geologist CA PG- 7830

Additional Sources

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Responses to Comments from Soluri Meserve, A Law Corporation

Please note that Comment Letter O-SM contained several exhibits. A portion of Exhibits 1 and 3; and Exhibit 2 in Comment Letter O-SM, included comments on the NHPH Draft EIR which are responded to, below. The remainder of Exhibits 1 and 3; and Exhibits 4 through 16 (including their sub-exhibits and attachments) in Comment Letter O-SM did not comment directly on the NHPH Draft EIR and no responses are included below. These exhibits are included in Appendix O-SM in this Final EIR.

O-SM-1 The commenter indicates that the comment letter is submitted on behalf of the Parnassus Neighborhood Coalition (PNC). The comment is noted; no response is required.

The commenter makes a general assertion that the NHPH is the most environmentally impactful component of the CPHP. The NHPH Draft EIR discloses all potential environmental impacts of the proposed NHPH and mitigates significant impacts to the extent feasible. See also responses that follow, below.

The commenter asserts that UCSF's release of a purportedly stand-alone EIR for the NHPH raises serious questions about UCSF's environmental review strategy. Please see responses to Comments O-SM-2 through O-SM-7, below.

The commenter asserts that the NHPH Draft EIR purpose is to justify piecemealed review of the broader CPHP, which thwarts public disclosure of the CPHP's environmental impacts. Please see responses to Comments O-SM-8 and O-SM-9, below.

O-SM-2 The commenter indicates the CPHP and NHPH are inextricably intertwined as a matter of fact, logic and law. The commenter asserts that the NHPH Draft EIR's claim that is provides a stand-alone comprehensive analysis of the NHPH is demonstrably false. The commenter quotes CEQA Guidelines Section 15378, that indicates that "project" means whole of the action; that the term "project" refers to the activity which is being approved and which may be subject to several discretionary approvals; and that the term "project" does not mean each separate approval. The commenter furthers asserts that the NHPH relies on the validity of the CPHP, and if the CPHP is set aside, then the NHPH cannot move forward.

The NHPH Draft EIR correctly states that the EIR has been prepared as a project-specific EIR which does not "tier" from the CPHP Final EIR and the commenter has not provided substantial evidence to the contrary, instead focusing on the definition of the "project" analyzed in the CPHP Final EIR and how the CPHP Final EIR describes the new hospital. The CPHP Final EIR analyzed the new hospital programmatically based on information available as of January 2020, the date the Notice of Preparation (NOP) was issued for the CPHP EIR. The CPHP

Final EIR (SCH# 2020010175) was certified by the Board of Regents as meeting all requirements of CEQA in January of 2021.

The NHPH EIR is a new EIR (SCH# 2021070547) for which a separate NOP was issued in July 2021 and correctly states (Introduction, page 1-4) that the document does not focus out any issues because they were addressed in the earlier EIR and does not incorporate any analyses in the CPHP Final EIR by reference. Focusing out issues and incorporating by reference are the strategies described as "tiering" in CEQA Guidelines Section 15152(a).

Lead agencies can decide what kind of EIR to prepare in various circumstances (CEQA Guidelines Section 15160), and in this case, UCSF has chosen to prepare a stand-alone project EIR that does not tier from the CPHP Final EIR. In doing so, UCSF is providing a detailed and complete evaluation of the NHPH project described in Chapter 3 of the NHPH Draft EIR, and has chosen to prepare the most common type of EIR, which examines the environmental impact of a specific project (CEQA Guidelines Section 15161).

The fact that the CPHP Final EIR described the new hospital as a part of its Initial Phase, and that the CPHP Final EIR stated that the NHPH would require the modifications to the 2014 LRDP's Parnassus Heights development plan proposed by the CPHP, does not mean that the NHPH cannot be evaluated independently. As noted in CEQA Guidelines Section 15168(c)(1), an analysis that follows preparation of a program level EIR (the CPHP Final EIR in this instance) "*may* tier from the program EIR [emphasis added]," however, a lead agency is not required to do so. Furthermore, Public Resources Code (PRC) Section 21093(b) provides that, "…environmental impacts reports shall be tiered whenever feasible, *as determined by the lead agency* [emphasis added]."

The scope and adequacy of the NHPH EIR, like all EIRs, must be evaluated based on its contents, and not the contents of other prior EIRs. In this case, the NHPH Draft EIR describes all aspects of the proposed NHPH and related improvements (NHPH Draft EIR Project Description, Section 3.7.1), the construction process (NHPH Draft EIR Section 3.7.2), and that the NHPH project would require an amendment of the 2014 LRDP as previously amended by Amendment #7, which was approved following certification of the CPHP Final EIR (NHPH Draft EIR, Chapter 3, page 3-8 and Section 3.7.3). The NHPH Draft EIR also contains a thorough analysis of potential impacts of the NHPH project (NHPH Draft EIR Chapter 4) and all other required contents of an EIR (CEQA Guidelines Section 15120 *et seq*.).

O-SM-3 The commenter asserts that there is an inextricable relationship between the CPHP and NHPH that is demonstrated by declarations submitted by UC employees in connection with the pending litigation challenging the CPHP and its EIR. The CPHP Final EIR certified in January 2021 is a program-level EIR

and describes numerous individual projects that would be undertaken at the Parnassus Heights campus site to implement the CPHP. As noted by the commenter and in the declarations cited in the comment, these projects include abatement of hazardous building materials and demolition of the LPPI, and construction of the proposed new hospital and other "initial phase" projects. The proposal of multiple projects for concurrent or sequential implementation in close proximity to each other was the rationale for preparing the CPHP program-level EIR, which analyzed the new hospital at a program-level.

UCSF does not dispute the role that the NHPH will play in the overall redevelopment of the Parnassus Heights campus site, and the NHPH Draft EIR acknowledges that the proposed NHPH "is part of the overall CPHP development program" (Draft EIR page 4.0-6). Nonetheless, the NHPH Draft EIR analyzes impacts of the new hospital at a project-level, while considering other CPHP projects, such as demolition of the LPPI and construction of the RAB, as reasonably foreseeable components of the cumulative context (NHPH Draft EIR page 4.0-8).

O-SM-4 See response to Comment O-SM-3 above.

O-SM-5 The commenter asserts that the NHPH's "whole of the action" includes the demolition of LPPI, but the NHPH Draft EIR piecemeals CEQA review by entitlement. The commenter further asserts that because the CPHP EIR purports to analyze the impact of demolition of LPPI does not mean that the demolition of LPPI is now somehow a separate CEQA project from development of the NHPH. As noted in the NHPH Draft EIR Project Description (page 3-4), demolition and removal of the LPPI and supporting structures were planned under the 2014 LRDP and are considered part of that plan. Because the LPPI was subsequently determined eligible for the National Register, the potential effect of demolition of the LPPI on historic resources was also analyzed as part of the CPHP EIR certified in January 2021.

The previously proposed and analyzed demolition of the LPPI is considered a separate and distinct project from development of the NHPH because it would occur under the 2014 LRDP as amended whether or not the NHPH is approved as currently proposed. In keeping with CEQA Guidelines Section 15373(c), the NHPH is the activity that is being proposed for approval by the Regents, and is therefore the "project" analyzed in the NHPH Draft EIR.

See also response to Comment O-TL1-18.

O-SM-6 The commenter asserts that UC expressly disavows any tiering from the CPHP EIR in an attempt to insulate any flaws in the CPHP EIR; however, the commenter also claims the NHPH Draft EIR's discussion of water quality impacts reveals tiering from the CPHP EIR. As discussed in response to Comment O-SM-2, an analysis that follows preparation of a program level EIR

"*may* tier from the program EIR [emphasis added]," and thus, is not required to do so (CEQA Guidelines Section 15005(c) ("'May' identifies a permissive element which is left fully to the discretion of the public agency involved"); and PRC Section 21093(b) states that "environmental impacts reports shall be tiered whenever feasible, *as determined by the lead agency* [emphasis added].

In this instance, UCSF has chosen to prepare a stand-alone, project-specific EIR for the NHPH that does not tier from the earlier program-level CPHP EIR. The commenter has failed to provide any evidence that the NHPH Draft EIR *does* in fact tier from the prior document, instead providing a statement from page 4.9-1 of the NHPH Draft EIR *Hydrology and Water Quality* section affirming that the analysis provides a project-level impact analysis of the proposed NHPH's impacts to hydrology and water quality: "In contrast to the program-level hydrology and water quality impact analysis previously conducted for the CPHP Final EIR, this section provides a project-level impact analysis of the proposed NHPH..." Section 4.9 of the NHPH Draft EIR also considers potential cumulative impacts of the NHPH when combined with projects proposed as part of the CPHP and other development in the City of San Francisco (NHPH Draft EIR pages 4.9-23 through -25).

Please also see response to Comments O-TL1-4 through O-TL1-7.

O-SM-7 The commenter asserts that there is no dispute that UC's claim to not rely on tiering necessarily means that the four corners of the NHPH Draft EIR must contain comprehensive analysis of the "whole of the action;" but the NHPH Draft EIR fails to comply with this requirement through its impermissibly truncated view of the scope of the NHPH as a CEQA project. As discussed in response to Comment O-SM-5, the NHPH is the activity that is proposed for approval by the Regents, and is therefore the "project" analyzed in the NHPH Draft EIR (CEQA Guidelines Section 15373(c)). The NHPH Draft EIR comprehensively analyses the whole of this action, which is described in Chapter 3, *Project Description* of the Draft EIR, and the Draft EIR contains all required components of an EIR (CEQA Guideline Section 15120 *et seq*.) without focusing out any issues that were analyzed in the CPHP Final EIR and without incorporating sections of the CPHP Final EIR by reference. The CEQA Guidelines are clear that a lead agency may choose to tier from a prior program-level EIR, but is not required to do so, and the commenter has not provided substantial evidence to demonstrate that the NHPH Draft EIR *does* tier from the prior EIR despite statements to the contrary. Where comments identify supposed deficiencies to specific analyses in the NHPH Draft EIR, these are responded to throughout these responses to comments.

O-SM-8 The commenter asserts that the EIR has engaged in piecemealed CEQA review by mischaracterizing the CPHP development program, which includes the NHPH, as independent cumulative projects from the NHPH, which deprives the

public of necessary project-level analysis. The commenter further asserts that the CPHP's planned development program, however, does not have independent utility from the NHPH (incorrectly referred to as the NHPA by the commenter). As described in response to Comment O-SM-7, above, the NHPH is the "project" analyzed in the NHPH Draft EIR, and the NHPH Draft EIR comprehensively analyses the whole of this action. Accordingly, the other planned CPHP development, including the three other CPHP Initial Phase projects and the CPHP Future Phase development, were appropriately considered and analyzed within the cumulative context in the NHPH Draft EIR.

O-SM-9 The commenter indicates the CPHP EIR failed to quantify the NHPH's operational cancer risk to neighbors because UC claimed that adequate project-level information was not available at that time. The commenter then indicates the project-level cancer risk information is now available, yet the NHPH Draft EIR minimizes that risk by applying a cumulative threshold of 100 increased cancer risks rather than the project-level threshold of 10 increased cancers. The commenter then states that the NHPH Draft EIR concludes that the resulting cancer risk is well above BAAQMD's project-level significance threshold of 10 increased cancer risks.

The NHPH Draft EIR correctly assessed the project-level health risks associated with project construction of the NHPH on pages 4.2-30 through 4.2-34 and appropriately compares these risks to the BAAQMD-recommended project-level threshold of 10 in one million. The NHPH Draft EIR correctly assessed the project level health risks associated with project operation of the NHPH on pages 4.2-34 through 4.2-36 and appropriately compares these risks to the BAAQMD-recommended project-level threshold of 10 in one million. The NHPH Draft EIR assesses the cumulative risks of the proposed project and other foreseeable projects on pages 4.2-42 through 4.2-44 and appropriately compares these risks to the BAAQMD-recommended cumulative threshold of 100 in one million.

O-SM-10 The commenter states that the NHPH Draft EIR impermissibly piecemeals the wind analysis because it includes only a project-specific wind tunnel analysis of the proposed NHPH. As described above in response to Comment O-SM-7 and other responses above, the NHPH is the "project" analyzed in the NHPH Draft EIR, and the NHPH Draft EIR comprehensively analyses the whole of this action. This includes a comprehensive wind tunnel analysis of the proposed NHPH and two separate cumulative analyses—for years 2030 and 2050—to evaluate the effects of the proposed NHPH along with other projects from the CPHP Initial Phase and related changes anticipated to occur by 2030, as well as to evaluate the effects of the project and 2030 development in the context of other cumulative development up through UCSF's 2050 planning horizon.

The commenter incorrectly asserts that "design-level information is now available" for projects other than the proposed NHPH. This is not correct: there

are no building-specific detailed plans yet available for the Research and Academic Building (RAB), Irving Street Arrival, or the initial phase of the densification of the existing Aldea Housing complex, nor are such project-specific detailed plans available for other UCSF Parnassus Heights projects planned under the CPHP. As indicated above, these other proposed buildings do not constitute the "proposed project," which is the NHPH. Accordingly, as explained above in the responses to Comments O-SM-3 and O-SM-6, these buildings are properly evaluated in the NHPH Draft EIR's cumulative analysis. It is noted that quantitative project-specific wind tunnel testing, such as was conducted for the NHPH, is only meaningful in the context of the City and County of San Francisco's pedestrian wind hazard criterion if based upon detailed building plans; otherwise, the results are of more limited value. As explained in the NHPH Draft EIR (page 4.1-21):

> The analysis was based on a relatively detailed developed massing model of the New Hospital under project conditions, and a *comparatively more simple massing model of the planned CPHP development under the two cumulative scenarios, because actual building designs do not yet exist for the structures anticipated in the cumulative scenarios* (emphasis added).

The analysis continues by explaining that the cumulative analysis "can be considered to generate conservative results, in that the model incorporates little in the way of setbacks and no façade detail on the cumulative buildings," and that setbacks and other articulation would likely reduce wind impacts of cumulative buildings. This is precisely the "less detailed" cumulative analysis that the commenter asserts, under "well settled" CEQA law, may be prepared.

As stated on NHPH Draft EIR page 4.1-100, all of the cumulative projects that would be greater than 80 feet in height and therefore could potentially result in adverse effects on pedestrian-level winds would be subject to NHPH Mitigation Measure C-AES-3, which would require project-specific wind tunnel testing for such projects when specific building designs are available, and would require, where applicable based on the results of the wind tunnel analysis, that feasible mitigation strategies, including design changes (e.g., setbacks, rounded/chamfered building corners, stepped facades, etc.), be employed to eliminate or reduce wind hazards to the maximum feasible extent. The wording of this mitigation measure is nearly identical to that of CPHP Mitigation Measure AES-4 from the CPHP Final EIR, which would also be applicable to all projects developed under the CPHP. It is clear from these mitigation measures that, the commenter's assertion notwithstanding, the NHPH Draft EIR's cumulative analysis would NOT "deprive[] the public of a project-level wind tunnel analysis" for any of the cumulative projects that could adversely affect pedestrian-level winds.

As stated on page 4-1-101 of the NHPH Draft EIR, however, until specific building designs are tested in the wind tunnel and feasible mitigation implemented,

where applicable, "it cannot be stated with certainty that no wind hazard exceedances would result from cumulative development including the proposed NHPH, and therefore this impact could be significant even with mitigation. Accordingly, this impact would be considered significant and unavoidable with mitigation."

O-SM-11 The commenter asserts that the abatement of the LPPI is necessary in order to demolish the LPPI and make way for the NHPH, and therefore should not be considered a separate cumulative project.

As discussed in the CPHP Final EIR, there were a number of projects at the Parnassus Heights campus site that were previously approved under the UCSF 2014 LRDP that had not yet been implemented at the time of preparation of the CPHP EIR, including demolition of the LPPI. Because the LPPI had been determined to be eligible for the California Register of Historical Resources subsequent to certification of the 2014 LRDP Final EIR, the CPHP Final EIR additionally addressed the potential effect of demolition of the LPPI on historic resources as part of the CPHP. All other environmental impacts associated with the demolition of the LPPI, including those related to abatement of hazardous materials, were deemed to be adequately addressed in the LRDP Final EIR. Accordingly, the CPHP Final EIR appropriately treated the demolition of LPPI (with the exception of the effects of demolition of LPPI on historic resources) as a cumulative project.

Similarly, the demolition and removal of LPPI was not included as part of the NHPH project, and was appropriately treated as a cumulative project in the NHPH Draft EIR (as addressed in the cumulative impact analysis on page 4.8-8 in the NHPH Draft EIR). This was the basis for the NHPH Draft EIR reporting the results of a hazardous materials survey that was underway for the LPPI in the cumulative context in Impact C-HAZ-1.

O-SM-12 The commenter makes a general assertion that how UC characterizes the CPHP's development program as a separate cumulative project means that project-level impacts have not been adequately analyzed and disclosed. The commenter is referred to responses to Comments O-SM-8 to O-SM-11, above.

The commenter also generally asserts that the NHPH Draft EIR fails to provide a stand-alone project level analysis of all aspects of the NHPH "whole of the action." The commenter is referred to responses to Comments O-SM-2 to O-SM-7, above.

O-SM-13 The commenter asserts that the NHPH Draft EIR uses an inconsistent baseline with regard to the existing ammonia tank at the Ammonia House site. The commenter states that the NHPH Draft EIR assumes the ammonia tank has been removed, but fails to provide additional discussion or analysis regarding its removal.

The removal of the existing 8,000-gallon ammonia tank at the Ammonia House site was proposed under the CPHP and analyzed in the CPHP Final EIR, and was included in the LRDP Amendment #7 approved in January 2021. The planned removal of that tank will occur after the planned aqueous urea tank is built near the Central Utility Plant, in 2024/2025.

The commenter asserts that the truncated project description in the NHPH Draft EIR thwarts adequate analysis of impacts related to the proposed project components at the Ammonia House. The commenter inquires if the Ammonia House site is large enough to house a 30,000-gallon tank. UCSF has determined sufficient space exists at the Ammonia House site to accommodate the 30,000-gallon stormwater storage tank proposed under the NHPH project. As noted above, UCSF plans to remove the existing ammonia underground storage tank as was approved under the CPHP, once the planned aqueous urea tank is completed in 2024/25, following which the proposed underground stormwater storage tank would be installed.

The commenter inquires if the Ammonia House site contains contaminants that need to be remediated before a new tank is installed. The NHPH Draft EIR did not identify the Ammonia House site as being included on a known list of hazardous materials sites compiled by governing regulatory agencies pursuant to Government Code 65962.5. Nevertheless, the NHPH Draft EIR Impact HAZ-4 acknowledges that the possibility exists during construction at the NHPH site (which includes the Ammonia House site) to encounter previously unidentified contamination. Accordingly, NHPH Mitigation Measure HAZ-4 requires that prior to NHPH development, a Soil Management Plan shall be implemented to ensure the NHPH would not create a significant hazard to the public or the environment as a result of exposure to unknown contamination or hazardous release sites, ensuring that this impact would be less than significant.

The commenter asserts that the NHPH Draft EIR fails to provide any information on aesthetics, light or glare impacts from the use of the Ammonia House site. The proposed underground storm water storage tank would be installed at the Ammonia House site, which would not result in any perceptible changes to this site. In addition, the possible installation of electrical metering and distribution switchgear would, as described on page 3-29, be fenced off, and screened from street view. Further, NHPH Draft EIR Section 4.1, *Aesthetics, Wind and Shadow* on page 4.1-44, discusses that any new lighting at the Ammonia House site would be limited to security lighting, similar to existing lighting at this site. Consequently, project improvements that would be located at Ammonia House site would not be anticipated result in a source of substantial light or glare which would adversely affect daytime or nighttime views in the area.

O-SM-14 The commenter reiterates the guidance set forth in the CEQA Guidelines with respect to the identification and treatment of alternatives in an EIR. The

commenter then asserts that the Draft EIR fails to identify and approve Alternative 1B as the environmentally superior alternative. For reasons set forth in the NHPH Draft EIR, the University finds Alternative 2, Reduced Project, to be environmentally superior, and not Alternative 1B, No Project – Smaller Hospital Per 2014 LRDP. Please note that EIRs do not approve alternatives; it is the responsibility of the lead agency to make findings regarding the feasibility of alternatives and approve the project or an alternative.

The commenter also asserts that the EIR does not describe a reasonable range of alternatives. First and foremost, the responsibility to formulate a range of reasonable alternatives lies with the lead agency, not a project's critics. (Laurel Heights, 47 Cal.3d at 406-07.). Further, as discussed in Chapter 6, *Alternatives*, the identification of a "reasonable range of alternatives" is governed by the "rule of reason," which requires the EIR to describe and consider only those alternatives necessary to permit informed public participation, and an informed and reasoned choice by the decision-making body (CEQA Guidelines Section 15126.6(a), (f)). Also, according to the CEQA Guidelines, the range of alternatives must, at a minimum, include alternatives that could feasibly attain most of the basic objectives of the project and could avoid or substantially lessen any of the significant effects of the project (CEQA Guidelines Section 15126.6(a)-(c)). Consistent with these provisions of CEQA, the NHPH Draft EIR analyzes two "no project" alternatives, a reduced project alternative, and a phased hospital alternative, for a total of four alternatives. The alternatives analyzed in detail represent a reasonable range of alternatives to permit informed decision making by the Regents. Note that consistent with the CEQA Guidelines, the Draft EIR also describes a number of alternatives that were considered but were not carried forward for detailed evaluation and presents the specific reasons for not carrying those alternatives forth for detailed evaluation.

O-SM-15 The commenter asserts that among the alternatives analyzed in detail in the NHPH Draft EIR, Alternative 1B would avoid or reduce the project's impacts the most, and therefore it must be identified as the environmentally superior alternative. The commenter also argues that the identification of the environmentally superior alternative must be based solely on the comparative environmental impacts of the alternatives, and not on a consideration of the alternative's ability to meet most of the basic project objectives, arguing that an alternative's ability to meet objectives must be considered at the time when the findings are prepared. This assertion is incorrect. Section 15126.6 of the CEQA Guidelines clearly states that the analysis of alternatives in an EIR is to be guided by the rule of reason and feasibility is listed among the factors to be considered. The section also states that in looking at the alternatives whether during their initial screening or in their detailed analysis, the EIR must examine the alternative for its ability to avoid or reduce the significant impacts of the project as well as meet the basic objectives of the proposed project. Therefore, the NHPH Draft EIR correctly uses both the alternative's ability to reduce project

impacts and its ability to meet basic project objectives to identify Alternative 2 as the environmentally superior alternative. The NHPH Draft EIR clearly explains on pages 6-48 and 6-49 that when the ability to reduce the project's impacts and the ability to meet most of the project's objectives are taken into consideration, Alternative 1B would not be considered environmentally superior. Further, contrary to the commenter's argument, in the final analysis, even Alternative 1A (No Project – No Development Alternative) is not considered environmentally superior because while it will reduce the project's impacts, it will not meet any of the basic objectives of the project.

O-SM-16 The commenter claims that Alternative 1B is the environmentally superior alternative and is feasible. Citing CEQA Guidelines Section 15126.6 (c) and (f) and *Watsonville Pilot Association vs City of Watsonville*, he further asserts that an environmentally superior alternative may not be rejected because it does not meet all of the project's objectives. First and foremost, the NHPH Draft EIR does not "reject" Alternative 1B. Instead, Alternative 1B is carried forth for detailed evaluation in the NHPH Draft EIR. The EIR fully describes the alternative, discloses its comparative impacts and evaluates its ability to meet key project objectives. The NHPH Draft EIR identifies the specific objectives that Alternative 1B would not meet, and fulfills the CEQA requirements as a disclosure document that provides the decision makers with the information they need about all the alternatives, including Alternative 1B. Having completed the analysis of this alternative and three other alternatives, the NHPH Draft EIR concludes that another alternative is environmentally superior.

The commenter agrees that this alternative would not meet the two key objectives of the proposed NHPH which are to provide an increased number of inpatient beds at the Parnassus Height campus site. Alternative 1B would not only provide substantially fewer beds than the proposed project but would actually reduce the existing number of beds at Parnassus Heights by 44 beds. In other words, the alternative does not address the main purpose of the project which is to provide more inpatient beds than are available at the present time. In a footnote, the commenter suggests that a variation of Alternative 1B could be developed to add 49 beds by renovating Moffitt Hospital. Even if this variant were to be looked at, it would increase the number of beds at the Parnassus Heights campus site by only 5 more beds compared to current conditions, and therefore would not meet the objective of addressing the need for more inpatient beds.

The commenter further asserts that the NHPH Draft EIR does not adequately explain why this alternative would not meet the other objectives of the project, which include providing adequate space to meet industry and regulatory standards of contemporary hospitals, such as the ratio of operating rooms to pre- and post-recovery spaces, and questions why the standards would not be met when in 2014, a smaller hospital was considered to be feasible and code compliant.

UCSF's current patient census and volume projections have changed since 2014 necessitating additional beds beyond those originally anticipated, and which thus makes a smaller hospital footprint not feasible. However, UCSF not only needs to provide more inpatient beds, but the increase in more operating rooms and recovery spaces is equally as critical in meeting the needs of patients seeking care at UCSF. The smaller hospital footprint did not allow for growth in these areas. Further, operating rooms and recovery spaces are much larger now in order to accommodate the equipment, mechanical, and IT/digital infrastructure that has all advanced. Contemporary hospitals need to include sufficient space to accommodate modern technology, including telemedicine, robotics, and new diagnostic, imaging, testing, treatment, surgery and laboratory equipment.

Please note that while Alternative 1B would provide 431 beds compared to 682 beds under the proposed project (a 37 percent reduction in number of beds), the amount of building space under this alternative (308,000 square feet) would reflect a 65 percent reduction from the 900,000 square feet of space under the proposed project. In other words, to keep the hospital at seven stories and to maximize the number of inpatient beds, the hospital under this alternative would not include some of the other clinical spaces that a modern hospital requires.

The commenter argues that UCSF does not justify the need for expanded clinical services at the Parnassus Heights campus site and that UCSF does not have to "capture all the predicted demand for clinical services to remain a leading health science institution." The commenter is referred to NHPH Draft EIR Section 3.5 in Chapter 3.0, *Project Description* which provides an adequate discussion of the need for the proposed project, including why the additional space is needed at this campus site. The project is not intended to capture all the predicted demand but to further the research, education, and public service mission of the University of California. As the NHPH Draft EIR explains, the three missions of clinical care, education, and research are inter-dependent and require balanced support to ensure continued excellence. Therefore, the outdated Moffitt Hospital must be replaced with a state-of-the-art teaching and research hospital that is sized to serve the projected needs of the community. Please also see NHPH Draft EIR Section 6.4.1 as to why the proposed project cannot be located at Mission Bay campus site and Section 6.4.3 as to why the new hospital cannot be located at the Mount Zion campus site. Both off-site alternatives would also not address growing demand for emergency, surgical, interventional radiology, and imaging services at Parnassus Heights campus site and would not help achieve the benefits that can be realized through interdisciplinary collaboration by continued co-location of clinical care, research, and education. Such interdisciplinary collaboration is a hallmark of UCSF and key to the many breakthrough scientific discoveries by the institution. Further, as all five professional programs (Medicine, Nursing, Pharmacy, Dentistry, and Physical Therapy) are established at the Parnassus Heights campus site, these off-site alternatives would not foster collaboration to the same extent as the proposed project.

O-SM-17 The commenter presents text from the Laurel Heights EIR to argue that when the University prepared that EIR, it argued that additional space was needed due to changes in research methods and technology, that it was infeasible to provide the additional space at the Parnassus Heights campus site, and that greater environmental impacts would occur if the space was provided at this campus site. The commenter states that the University took the same position in 2014, but now has completely reversed its position because it has received a large donation.

The NHPH Draft EIR acknowledges in Section 3.4 that while the 2014 LRDP included a more limited development program including a smaller hospital at the Parnassus Heights campus site, in 2018, UCSF undertook a planning process to re-envision and revitalize the Parnassus Heights campus site engaging both internal and external stakeholders. The planning process resulted in the development of the CPHP which was aimed at updating the projected space needs for critical programs in research, patient care, and education at the campus site, improving the functional and aesthetic design of the campus environment, and planning for needed on-campus housing. UCSF also began to plan the NHPH, which projects the need for a larger hospital than was planned in the 2014 LRDP.

As discussed in detail in the NHPH Draft EIR Section 3.5, *Project Need*, the Medical Center at Parnassus Heights inpatient census is at a record high and continues to experience unprecedented growth. The Medical Center is already at capacity and has to turn away transfer patients who need complex care. It is anticipated that there will be a 14 percent increase in medically necessary transfers by 2030. Further, the complex tertiary and quaternary cases treated by UCSF specialists at Parnassus Heights are forecast to increase in number over the coming years and decades, due to the Bay Area's projected population growth, which includes an increase in the Medicare population due to an aging regional population.

The proposal for a New Hospital at Parnassus Heights in fact would implement the second step in the hospital replacement plan that has been decades in the making following the adoption by the State Legislature of Senate Bill 1953 establishing new seismic safety standards for inpatient facilities in California. A campus-wide assessment of inpatient facilities across UCSF's campus sites was undertaken in the early 2000s. In 2005, the Regents approved LRDP Amendment #2 to the 1996 LRDP, which envisioned a hospital replacement plan with potential new inpatient facilities both at Mission Bay and at Parnassus Heights. The plan further envisioned that Mount Zion would be transitioned to primarily an outpatient hub. In 2008, the Regents approved LRDP Amendment #3 to the 1996 LRDP to provide an update to the plan, as well as to share details regarding the plans for the new hospital at Mission Bay. LRDP Amendment #3 summarizes (p. 3) "The Initial Phase ('LRDP Phase') of those recommendations, which were adopted in LRDP Amendment #2, are to: 1) develop three integrated

specialty hospitals with about 210 beds at Mission Bay by 2012; 2) maintain tertiary and quaternary care with about 600 beds at Parnassus Heights for a total of about 810 beds during the LRDP phase; 3) provide ambulatory care facilities at both Parnassus Heights and Mission Bay; and 4) populate both sites with basic and translational disease oriented research programs."[4] UCSF is implementing this plan, first with the opening of Phase I of the Mission Bay hospitals in 2015, followed by other clinical facilities to complete the Initial Phase of the Medical Center at Mission Bay. The proposed New Hospital at Parnassus Heights is the next step.

The University has prepared a project-level EIR that analyzes and discloses the significant environmental impacts from the construction and operation of the proposed hospital and related improvements.

Donations to UCSF for the construction of the New Hospital or any other project are not required to be analyzed under CEQA.

O-SM-18 The commenter asserts that the Draft EIR impermissibly rejects analysis of any off-site alternatives, including locating the proposed hospital at Mission Bay, Mount Zion or Hunters Point, and incorporates by reference comments made by others on the CPHP Final EIR regarding off-site alternatives, as well as petitioner's briefs submitted in the litigation filed against the certification of the CPHP Final EIR.

The NHPH Draft EIR appropriately dismisses the off-site alternatives from detailed evaluation. While a lead agency's task is to identify a range of alternatives that satisfy basic project objectives while reducing significant impacts, alternatives that are not at least "potentially feasible," are excluded at the initial stage because there is no point in studying alternatives that cannot be implemented or that will not succeed (CEQA Guidelines Section 15126.6(a). The NHPH Draft EIR sets forth a number of reasons why the off-site alternatives would not succeed. Those reasons are reiterated in the responses below and as appropriate, additional explanation is also provided.

All of the comments on the CPHP EIR cited by the commenter and the briefs were reviewed and to the extent that the comments/arguments concern alternative locations for the proposed NHPH, they have been reviewed carefully and are addressed in response to Comments O-SM-19 through O-SM-22 below.

[4] UCSF, *Long Range Development Plan Amendment #2 – Hospital Replacement Program Final Environmental Impact Report*, certified March 2005.
UCSF, *UCSF Medical Center at Mission Bay Final Environmental Impact Report*, certified September, 2008.
UCSF, *UCSF Long Range Development Plan Amendment #2 and 2004 LRDP Update*, approved by the Regents March 17, 2005.
UCSF, *UCSF Long Range Development Plan Amendment #3 and 2008 LRDP Update,* approved by the Regents July 15, 2008 and September 17, 2008.

O-SM-19 In these two comments, the commenter makes several references to the CPHP, and not NHPH which is the subject of the current EIR. The University assumes that the reference to the CPHP is in error and that the commenter intended to say NHPH. The University has therefore provided responses to these comments below.

In Section 6.4, the NHPH Draft EIR considers an alternative called No New Hospital at Parnassus Heights Campus Site / Implement Phase 2 of Medical Center at Mission Bay Campus Site, generally describing this alternative as not building a new hospital at Parnassus Heights and instead, advancing the development of "Phase 2" of the Medical Center at the Mission Bay campus site as analyzed in the 2008 Final EIR for the UCSF Medical Center at Mission Bay. As discussed in the NHPH Draft EIR and pointed out by the commenter, this alternative would reduce significant and unavoidable impacts at the Parnassus Height's campus such as the wind impact and also reduce or avoid other impacts such as temporary construction and operational impacts associated with the New Hospital. However, many construction and operational effects that were identified to occur at the Parnassus Heights campus site would be shifted to the Mission Bay campus site under this potential alternative. Also, while some transportation and air quality impacts experienced at the Parnassus Heights campus site would be reduced, other transportation and air quality impacts could be greater overall due to increased cross-town traffic between the two campus sites, as students, faculty, staff, and patients travel between the facilities.

Also, as noted by the commenter and explained in Section 6.4.1 of the NHPH Draft EIR, this alternative would result in an estimated 291 fewer overall beds at the Parnassus Heights campus site and UCSF campus-wide than with the proposed project, thereby not fully addressing existing and projected bed shortages in San Francisco and the region for the adult clinical services and specialties provided at Parnassus Heights. This alternative would also not address growing demand for emergency, surgical, interventional radiology, and imaging services at the Parnassus Heights campus site and would not help achieve the benefits that can be realized through interdisciplinary collaboration by continued co-location of clinical care, research, and education. Such interdisciplinary collaboration is a hallmark of UCSF and key to the many breakthrough scientific discoveries by the institution. Co-location of clinical uses in the New Hospital would allow UCSF to operate more efficiently, allow the Moffitt, Long, and New hospitals to share resources, and also minimize intra-campus travel for patients and staff. Further, as all five professional programs (Medicine, Nursing, Pharmacy, Dentistry, and Physical Therapy) are established at Parnassus Heights, this alternative would not foster collaboration to the extent that would occur with the proposed project. For all of the above reasons, the NHPH Draft EIR appropriately dismissed this off-site alternative from in-depth analysis.

The commenter questions why the number of beds cannot be increased at Mission Bay. Future development of additional inpatient beds at Mission Bay is already part

of UCSF's long-term clinical facilities planning. The proposed NHPH in fact would implement the second step in the hospital replacement plan that has been decades in the making following the adoption by the State Legislature of Senate Bill 1953 establishing new seismic safety standards for inpatient facilities in California. A campus-wide assessment of inpatient facilities across UCSF's campus sites was undertaken in the early 2000s. In 2005, the Regents approved LRDP Amendment #2 to the 1996 LRDP, which envisioned a two-hospital plan with potential new inpatient facilities both at Mission Bay and at Parnassus Heights. In 2008, the Regents approved LRDP Amendment #3 to the 1996 LRDP to provide an update to the two-hospital plan, as well as to share details regarding the plans for the new hospital at Mission Bay. LRDP Amendment #3 summarizes (page 3) "The Initial Phase ('LRDP Phase') of those recommendations, which were adopted in LRDP Amendment #2, are to: 1) develop three integrated specialty hospitals with about 210 beds at Mission Bay by 2012; 2) maintain tertiary and quaternary care with about 600 beds at Parnassus Heights for a total of about 810 beds during the LRDP phase; 3) provide ambulatory care facilities at both Parnassus Heights and Mission Bay; and 4) populate both sites with basic and translational disease oriented research programs." UCSF is implementing this plan, first with the opening of Phase I of the Mission Bay hospitals in 2015, followed by other clinical facilities to complete the Initial Phase of the Medical Center at Mission Bay. The proposed NHPH is the next step. Completion of the next phase of the Mission Bay hospitals would occur in the future.

The commenter asserts that the NHPH Draft EIR does not provide an adequate analysis of why the Mission Bay alternative or an alternative that moves some of the facilities to Mission Bay would conflict with the 2014 LRDP. The 2014 LRDP includes objectives to replace Moffitt Hospital with a New Hospital and ensure operational efficiency, effectiveness and proximity of clinical uses with other campus site uses; and ensure that Long Hospital and the New Hospital have adequate clinical and administrative support and are aligned with education, research and specialized care programs and support that remain at the campus site. If the New Hospital were to be located at Mission Bay, those objectives would not be realized.

The commenter also argues that "decreased efficiency" due to the location of the New Hospital at Mission Bay is not a fundamental objective and not a valid reason to not analyze this alternative in detail, and that an alternative is not required to meet all of the objectives of the project. As stated in the NHPH Draft EIR, operational efficiency is one of ten objectives of the proposed NHPH, that is "to site and develop a new inpatient facility in a way that optimizes operational activities with other clinical facilities at Parnassus Heights, such as Moffitt and Long Hospitals, and Medical Building 1." As stated above, co-location of clinical uses in the New Hospital alongside existing clinical uses would allow UCSF to operate more efficiently, allow the Moffitt, Long, and New hospitals to share resources, and also minimize intra-campus travel for patients and staff. Conversely, locating the

hospital at Mission Bay would not allow for this efficiency to be achieved and would result in inconvenience for patients, staff and students. Also, note that NHPH Draft EIR does not dismiss this alternative from detailed evaluation based on just this one reason, but because the alternative would not satisfy two other objectives related to provision of an adequate number of inpatient beds.

Citing *Goleta I,* the commenter argues that off-site alternatives cannot be rejected for analysis because a project proponent does not want an off-site project. The University did not summarily dismiss the Mission Bay (and other off-site alternatives) from detailed evaluation. It looked at the alternative for its ability to meet the key objectives of the proposed project and found that the alternatives would not meet those objectives, making the alternatives infeasible, and that any further evaluation of those alternatives would be of no value to the decision makers. Further, as discussed above, the New Hospital at Parnassus Heights represents phase two of the UCSF hospital replacement program adopted by the Regents in 2005.

O-SM-20 Commenters (on the CPHP Final EIR) stated that the Mission Bay hospital was justified in part by the development cap at Parnassus Heights campus site, and suggested that because locating the New Hospital at Mission Bay alternative would reduce impacts of the proposed project and is feasible, it should be fully evaluated in the EIR and ultimately approved in lieu of the proposed project. However, for reasons set forth in the NHPH Draft EIR and the responses above, the NHPH Draft EIR does not conclude that this alternative is feasible, recognizing that "failure to meet most of the basic project objectives" is "among the factors that may be used to eliminate alternatives from detailed consideration" (CEQA Guidelines Section 15126.6(c)).

O-SM-21 The commenter argues that as with the Mission Bay alternative, the alternative to locate the New Hospital at Mount Zion is also rejected in the NHPH Draft EIR for failing to meet project objectives and for resulting in inefficiencies. Similar and other comments were made on the analysis of the Mount Zion alternative in the CPHP EIR and those comments were also reviewed and considered in the response presented below.

All of the reasons for dismissing the Mission Bay alternative that are listed in response to Comment O-SM-20 above also apply to the Mount Zion alternative. This alternative will also not meet the key objectives of providing the needed beds at Parnassus Heights and the operational efficiencies from the co-location of the New Hospital with Moffitt and Long Hospitals and Medical Building 1 as well as the benefits that derive from the co-location of clinical, research and educational facilities. Furthermore, as explained in Section 6.4.3 of the NHPH Draft EIR, UCSF does not own the Mount Zion south block sites, making it unclear whether UCSF can reasonably acquire or have access to that site (CEQA Guidelines Section 15126.6(f)(1)). For all of the above reasons, the NHPH Draft EIR appropriately dismissed this off-site alternative from detailed analysis.

O-SM-22 A number of commenters on the CPHP EIR suggested that a University-owned, 3.8-acre site at Hunters Point should be considered for the New Hospital. The commenter notes that this alternative was not considered in the NHPH Draft EIR. The commenter also asserts that a revised Draft EIR is required to consider and analyze all of these alternatives and select the environmentally superior alternative unless it is truly infeasible.

This suggestion does not represent a feasible alternative for consideration in the NHPH EIR because similar to the off-site alternative at the Mission Bay campus site, it would not meet most of the basic objectives of the project. As explained above, interdisciplinary collaboration is a hallmark of UCSF and key to the many breakthrough scientific discoveries by the institution. As all five professional programs (Medicine, Nursing, Pharmacy, Dentistry, and Physical Therapy) are established at Parnassus Heights, this alternative would not foster collaboration given the distance of the Hunters Point site from UCSF's main facilities. It should be noted that the Hunters Point facility is a small remote site, consisting of small structures used for research, and has no clinical facilities that could be converted to a robust, multidisciplinary campus site needed to support the inpatient clinical, outpatient, research and teaching needed.

For reasons set forth in the responses above, the University has determined that a revised Draft EIR is not required, and the NHPH Draft EIR appropriately identified Alternative 2 as the environmentally superior alternative.

O-SM-23 The commenter summarizes CEQA Guidelines Section 15125(a) and references CEQA case law. The commenter also cites an excerpt from the NHPH Draft EIR Section 4.0, *Approach to Environmental Analysis*, that while the NOP was published on July 29, 2021, the appropriate baseline condition for this EIR would be the same as that used in the CPHP Final EIR, which was January 2020. No response is required for these comments.

The commenter then asserts that the NHPH Draft EIR's actual analysis of impacts, however, does not use this baseline. Please see responses that follow.

O-SM-24 The commenter cites an excerpt from the NHPH Draft EIR Section 4.10, *Land Use and Planning* and indicates that the NHPH Land Use section finds that the NHPH is consistent with the Space cap, as it was amended by the Regents in 2021. The commenter then claims that this is inconsistent with the NHPH Draft EIR's earlier assertion that the baseline conditions are the same at the ones at the time of the CPHP, and allows the NHPH Draft EIR to conclude that the New Hospital would be consistent with UC Plans and Policies, thus finding that the land use impact is less than significant.

There is no inconsistency. The NHPH Draft EIR land use environmental setting describes land uses on the campus site and vicinity as they existed in January 2020 (to the extent information was available). However, the NHPH Draft EIR

land use regulatory framework discussion also acknowledged notable subsequent changes in the regulatory environment that had occurred since January 2020, including Amendment No. 7 to the 2014 LRDP that was approved in January 2021 to incorporate the CPHP and make other conforming changes, including but not limited to, the revisions to the Regents' Resolution to increase the space ceiling and population estimates.

NHPH Draft EIR Impact LU-1 appropriately analyzes the proposed NHPH in consideration of the approved Amendment No. 7 to the 2014 LRDP, and revision to the Regents' Resolution, among other conforming changes. NHPH Draft EIR Impact LU-1 accurately explains that the combined building space in the three hospitals on the campus site under the NHPH (i.e., the New Hospital, and Moffitt and Long Hospitals) would be two percent less than the total building space assumed for the hospitals in the 2014 LRDP as amended, and consequently, would be within the space ceiling limit set in the amended Regents' Resolution. Impact LU-1 also acknowledges that the slightly higher bed count proposed under the NHPH over that included in the 2014 LRDP as amended would not have a meaningful effect on the projected daily population estimates at the campus site in the amended Regents' Resolution. Impact LU-1 finds that the proposed building program and population associated with the New Hospital and renovation of Moffitt and Long Hospitals would therefore be consistent with the 2014 LRDP Parnassus Heights objective related to conformance with the space limit and population estimates established in the Regents' Resolution as amended; and the impact would be less than significant.

O-SM-25 The commenter asserts that the NHPH Draft EIR analysis of population and housing impacts relies on the 2021 MOU between UCSF and the City of San Francisco, which committed UCSF to deliver 1,263 new units by 2050. The commenter claims that reliance on this information to determine significance is inconsistent with the NHPH Draft EIR's baseline.

There is no inconsistency. The NHPH Draft EIR Population and Housing section's environmental setting described existing population, employment and housing as it existed in January 2020 (to the extent information was available). However, the NHPH Draft EIR population and housing regulatory framework discussion also acknowledged notable subsequent changes in the planning and regulatory environment that had occurred since January 2020, including an updated *Plan Bay Area* (2050) by the Association of Bay Area Governments (ABAG) and the Metropolitan Transportation Commission, and evolving updates to ABAG's Regional Housing Needs Allocation for the Bay Area.

NHPH Draft EIR Impact C-POP-1 appropriately analyzes the proposed NHPH in consideration of approved agreements, including the Memorandum of Understanding (MOU) between UCSF and the City (January 22, 2021). As discussed in Impact C-POP-1, some of the additional population associated with

the NHPH and cumulative projects would be expected to be housed in the approximately 1,263 net new units that would be provided by UCSF in the city by 2050 under the MOU, half delivered by 2030, with the remaining half divided equally by 2040 and 2050, thereby reducing demand for off-campus housing in the city and Bay Area. This includes the 762 net new housing units at Parnassus Heights analyzed in the CPHP EIR. In addition, UCSF has agreed under the MOU to explore and develop additional housing in other parts of the City to accommodate UCSF students and employees, including those that study and/or work at Parnassus Heights. These would include 71 units of faculty housing at 2130 Post Street, and about 230 units in the Civic Center in collaboration with UC Hastings; both projects completed CEQA environmental review. Also, as part of the MOU, UCSF committed to facilitating the delivery of 200 additional units in the future in the City that could simply be met by an in lieu payment to the City and for which the City would complete CEQA review of such units.[5]

NHPH Draft EIR Impact C-POP-1 finds that the NHPH growth would not be anticipated to trigger shifts in demand for housing in the study area or beyond the regional housing market area, and the contribution made by the proposed NHPH would not be cumulatively considerable, and consequently, the impact would be less than significant.

5 *Memorandum of Understanding, University of California, San Francisco – Comprehensive Parnassus Heights Plan*, January 22, 2021.

Letter from Janet Napolitano, President, University of California Board of Regents to Chancellor and Dean David Faigman, UC Hastings College of Law, *RE: 198 McAllister Housing Occupancy Agreement*, May 27, 2020.

Decision Memo from Peggy Arrivas, Associate Vice President Systemwide Controller, *Occupancy Agreement for 198 McAllister (UC Hastings Housing)*, February 27, 2020.

Chancellor of the University of California, San Francisco to Executive Vice President –Chief Financial Officer, University of California, Office of the President, *Action for Approval under Chancellor Authority –Approval of Budget for Capital Improvements, Amendment #5 to the UC San Francisco 2014 Long Range Development Plan, and Design Following Action Pursuant to California Environmental Quality Act, 2130 Post Street Faculty Housing Seismic Retrofit, San Francisco Campus; Action for Approval Under Executive Vice President –Chief Financial Officer –Approval of External Financing, 2130 Post Street Faculty Housing Seismic Retrofit, San Francisco Campus*.

Certification of Final Environmental Impact Report and Approval of the Long Range Campus Plan for University of California, Hastings College of the Law, including: *Mitigation Monitoring and Reporting Plan* (July 6, 2016), *Environmental Impact Report –Response to Comments* (June 13, 2016), *Errata –Long Range Campus Plan Final EIR* (July 6, 2016), *Draft Environmental Impact Report* (March 25, 2016), *Final Environmental Impact Report for the University of California, Hastings College of the Law, Long Range Campus Plan, State Clearinghouse No. 2015122035*, certified on July 14, 2016.

O-SM-26 The commenter asserts that the NHPH Draft EIR analysis of aesthetics improperly relies on a baseline that assumes approval of Amendment No. 7 to the 2014 LRDP, which was approved on January 20, 2021 after the Draft NHPH baseline of January 2020.

First, with respect to aesthetics, as discussed in Section 4.02, *Scope of Analysis*, the NHPH meets the criteria of Public Resources Code Section 21099(d) which states that aesthetic impacts of an employment center project on an infill site located within a transit priority area shall not be considered significant impacts on the environment. Nevertheless, the NHPH Draft EIR provides an assessment of potential aesthetic impacts since the public and decision-makers may be interested in information pertaining to the aesthetic effects of the proposed NHPH, and may desire that such information be provided as part of the environmental review process.

The NHPH Draft EIR aesthetics environmental setting described the aesthetic conditions as they existed in January 2020. However, the NHPH Draft EIR aesthetics regulatory framework discussion also acknowledged notable subsequent changes in the UCSF regulatory and planning environment that had occurred since January 2020, including Amendment No. 7 to the 2014 LRDP that was approved in January 2021; the Physical Design Framework amended in December 2020; and Parnassus Heights Design Guidelines, completed in May 2020.

NHPH Draft EIR Impact AES-2 appropriately analyzes the proposed NHPH in consideration of the approved Amendment No. 7 to the 2014 LRDP, and other updated UCSF planning documents. As described in Impact AES-2, the proposed New Hospital would be consistent with applicable 2014 LRDP objectives governing scenic quality. Amendment No. 7 to the 2014 LRDP incorporated the CPHP planning concepts and proposals and other necessary conforming changes into the 2014 LRDP. While as discussed above, Amendment No. 7 clarified that sub-objectives 1B and 1C do not apply to the New Hospital in recognition of the substantial amount of space required for the New Hospital and need for proximity to the existing hospitals, UCSF would make efforts to come as close as possible to meeting these objectives, as feasible. The design of the New Hospital would be consistent with UCSF's Physical Design Framework and Parnassus Heights Design Guidelines. The New Hospital would also be consistent with applicable CPHP objectives related to space and urban design. The NHPH Draft EIR finds that given the above factors, the New Hospital would not conflict with the 2014 LRDP objectives related to scenic quality, and the impact would be less than significant.

O-SM-27 The commenter asserts that the NHPH Draft EIR relies on an inaccurate baseline by assuming the removal of the ammonia tank located at the Ammonia House. The commenter is referred to response to Comment O-SM-13, above. The

removal of the ammonia tank at the Ammonia House was included as part of the approval of LRDP Amendment #7 in January 2021. UCSF plans to remove the existing ammonia underground storage tank after the planned aqueous urea tank is built near the Central Utility Plant, in 20242025, and prior to installation of the stormwater underground storage tank at the Ammonia House site as proposed under the NHPH.

As such, the improvements planned at the Ammonia House under the CPHP, and those proposed at the Ammonia House under the NHPH, would not occur until after 2024/2025 and would be coordinated by UCSF to occur in a logical progression.

O-SM-28 The commenter asserts that the NHPH Draft EIR relies on an unlawfully inconsistent baseline that appears to minimize environmental impacts in violation of CEQA. For the reasons described in responses to Comments O-SM-23 to O-SM-27, above, an appropriate and consistent baseline is used in the NHPH EIR, and all environmental impacts are adequately analyzed and mitigated to the extent feasible.

O-SM-29 The comment raises concerns that the analysis of construction noise impacts in the NHPH Draft EIR does not correlate high noise levels with "other potential health effects" given the 12-year construction period.

As the commenter indicates, the construction noise analysis in the NHPH Draft EIR, which identified a significant and unavoidable impact with mitigation, followed this analysis with a discussion of the potential health effects of the significant NHPH construction noise impacts on pages 4.11-22 and 4.11-23 of the NHPH Draft EIR.

Table 4.11-6 on page 4.11-19 of the NHPH Draft EIR identified a predicted noise level of 71 dBA or less at the nearest receptor for all active NHPH construction activities when these activities are occurring at the closest point to the receptors, providing a worst-case analysis. As a practical matter, the majority of work would be conducted at a greater distance than these reported setbacks, and consequently resultant noise levels at the receptors during the majority of the construction period would be less than these predicted values. NHPH Mitigation Measure NOI-1a: Construction Noise Control Measures identifies several noise control strategies that would further reduce these predicted noise levels.

Occasional deliveries and movement of materials from the proposed Surge Parking Lot staging area could generate noise levels at the property line of up to 84 dBA. As stated on page 4.11-20 of the NHPH Draft EIR, NHPH Mitigation Measure NOI-1a would require shielding of the staging area where adjacent sensitive receptors have direct line-of-sight with loading and delivery activities. Depending on the materials used, such shielding can provide anywhere from 5 to 15 dBA of noise reduction, reducing this predicted noise level.

The identified significant construction noise impact in the NHPH Draft EIR is a result of the elevated noise level compared to the relatively quiet conditions in the residential areas on Edgewood Avenue, and is not due to very high noise levels that may result in health impacts.

O-SM-30 The commenter is concerned that the operation noise analysis of impacts from the proposed rooftop cooling towers may understate the resultant nighttime noise impacts to the closest receptors, and assumes that the residents would need to keep their windows closed.

The noise impact assessment for the cooling towers is provided on pages 4.11-23 and 4.11-24 of the NHPH Draft EIR. This analysis assumes a 15 dBA exterior to interior noise reduction from standard building materials at the impacted residential uses with windows open and not closed. The analysis applies the City of San Francisco's nighttime interior noise standard codified in Section 2909(d) of the Police Code (page 4.11-13 of the NHPH Draft EIR). This is consistent with Appendix G of the CEQA Guidelines which recommend that a noise analysis under CEQA assess whether a project would generate a substantial permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance. Additionally, this interior noise level standard is consistent with the requirements of the California Building Code (page 4.11-9 of the NHPH Draft EIR). If windows are closed, a further 10 dBA of exterior to interior noise reduction may be expected and the resultant interior noise level would be lower than those conservatively estimated in the NHPH Draft EIR.

O-SM-31 The comment identifies NHPH Mitigation Measure NHPH NOI-1b as unenforceable deferred mitigation because it allows for some construction activity to occur during nighttime work if certain conditions are met.

NHPH Mitigation Measure NOI-1b is not "deferred mitigation" as it imposes specific restrictions and commits the University to restricted construction hours that are more restrictive than those promulgated by Section 2908 of the San Francisco Police Code which allow construction during weekdays until 8:00 p.m. to prohibit construction noise during the most noise sensitive periods for surrounding receptors. It also provides that "in rare circumstances, work may need to occur outside of those work hour limits." This limited exception, if invoked in rare circumstances, such as for large concrete pours that need to be continuous and often require cooler nighttime temperatures, includes additional measures to be identified through community engagement to further reduce potential noise impacts.

The comment suggests these additional measures are vague and lack performance standards, however, "restricting work to smaller time windows, condensing the overall duration of nighttime work to the degree feasible, and erecting temporary

barriers to shield the short-term nighttime activity" as specified in Mitigation Measure NOI-1b are not considered vague. Furthermore, performance standards based on specific standards that inform the agency "what it is to do and what it must accomplish" are sufficient (*Center for Biological Diversity v. Dept. of Fish and Wildlife* (2015) 234 Cal.App.4th 214, 245 ("*CBD*"), and so they are in this case: the measures are enforceable and not deferred; they give specific direction about how to conduct the work; and the NHPH Draft EIR found that the construction noise impact would remain significant and unavoidable after mitigation.

O-SM-32 This comment introduces other comments prepared by Soli/Water/Air Protection Enterprise (SWAPE) that are provided and addressed in response to Comments O-SM-57 through O-SM-61, and O-SM-68 through O-SM-75, below. Please refer to the responses to these individual comments.

O-SM-33 This comment asserts that the NHPH Draft EIR does not contain information about the allocation of cap-and-trade offsets and whether they are already applied to the cited offset amount of 27,449 MT CO2e per year.

As discussed on pages 4.7-36 and 4.7-37 of the NHPH Draft EIR, NHPH Mitigation Measure GHG-1 sets forth a numerical performance standard based on the estimated GHG emissions projected to be generated by the operation of the proposed NHPH (27,449 MT CO_2e per year) to be offset. These emissions only reflect GHG emissions attributable to the proposed project without implementation of the identified NHPH Mitigation Measure GHG-1 offsets whether they are cap-and-trade-based or voluntary. The sources of these predicted emissions are inventoried in Table 4.7-3 on page 4.7-36 of the NHPH Draft EIR, as well as in Appendix GHG of the NHPH Draft EIR.

It is true that that the University is limited by State law to offset up to eight percent of its compliance obligation using carbon offset credits under the cap-and-trade program. This is clearly stated on page 4.7-16 of the NHPH Draft EIR. This is why NHPH Mitigation Measure GHG-1 makes a distinction between its continued compliance with CARB's cap-and-trade program and its commitment to control Parnassus Heights campus site annual emissions to not exceed existing baseline levels using voluntary carbon offsets.

O-SM-34 This comment suggests that NHPH Mitigation Measure GHG-1 is unenforceable.

This comment ignores the fact that NHPH Mitigation Measure GHG-1 requires that "Carbon offset credits used for this purpose shall originate from a voluntary carbon credit registry that TCR recognizes, such as: CAR, ACR, or Verra (other registries are also applicable). Offset credits in this case shall be registered, transferred, and retired at such registries. The offsets will also be subjected to an internal UC peer review process. The protocols of each registry, and UC's own internal screens and criteria, shall be used to demonstrate that the carbon offset

credits provided are real, permanent, additional, and have been independently verified as adhering to its applicable project protocols." Note that UC Policy requires that offsets be reported publicly and tracked through the Climate Registry (TCR). TCR is a non-profit organization governed by U.S. states and Canadian provinces and territories. UCSF's TCR reports are third-party verified and posted publicly. As the NHPH Draft EIR explains, in order to demonstrate that the voluntary carbon offset credits purchased by UCSF are real, permanent, additional, quantifiable, verifiable, and enforceable, as those terms are defined in 17 California Code of Regulations § 95802(a), UCSF shall document in its annual report: (i) the protocol used to develop those credits, and (ii) the third-party verification report concerning those credits. As and when the credits are retired, UCSF shall document in its annual report the unique serial numbers of those credits showing that they have been retired. Please note that the text of NHPH Mitigation Measure GHG-1 has been expanded to include direction regarding offsets provided in the updated UC *Sustainable Practices Policy*; this direction will be applicable to all voluntary carbon offsets purchased by UC campuses, including UCSF. Please see Chapter 8.5, *Revisions to the Draft EIR*. Please also see response to Comment O-SM-37 below regarding the recent update to the UC *Sustainable Practices Policy* related to procurement of offsets.

O-SM-35 This comment raises concerns that UCSF's purchase of voluntary offsets credits identified in NHPH Mitigation Measure GHG-1 will not require the same stringent enforceability as credits from the cap-and-trade market.

The voluntary offset credits that UCSF will purchase to offset the increase in GHG emissions due to the proposed project will be as enforceable as the carbon offset credits purchased from the cap-and-trade market because the mitigation measure sets forth very specific performance standards and screens that the credits must clear in order to be used for mitigation. These standards include the requirement that "offset credits shall be third-party verified by a major registry recognized by CARB such as CAR (Climate Action Reserve) or equivalent," are subjected to UC's internal peer review, and that UCSF shall document in its annual report: (i) the protocol used to develop those credits, and (ii) the third-party verification report concerning those credits. Please also see response to Comment O-SM-36 below which provides additional detail as to why the voluntary offset credits will be enforceable and effective.

O-SM-36 The commenter suggests that UCSF's purchase of voluntary offsets credits identified in NHPH Mitigation Measure GHG-1 will not require the same stringent enforceability as credits from the cap-and-trade market and would therefore be in conflict with the court's decision in *Golden Door Properties, LLC v. County of San Diego* (2020). 50 Cal.App.5th 467 ("*Golden Door II*") and would not be subject to protocols and safeguards to ensure adequacy and enforceability.

The comment references the recent decision in *Golden Door II* in suggesting that NHPH Mitigation Measure GHG-1 is "unenforceable." That case—which the court expressly "limited" to its specific facts—is inapplicable because UC's analysis and mitigation measure do not suffer from any of the specific flaws in the mitigation set forth in *Golden Door II*.

Golden Door II involved a mitigation measure that allowed General Plan Amendment ("GPA") project applicants to mitigate in-county GHG emissions by purchasing carbon offsets originating out-of-county, including internationally. Although the mitigation required all GPA projects to first mitigate GHG emissions through all feasible onsite design features, once onsite measures were exhausted, GPA projects would have been able to use off-site mitigation, including the purchase of domestic or international carbon offset credits. The court noted that "[a]n international offset in a developing country is inevitably dependent upon the host country or third parties to validate the activities giving rise to the offset.

Corruption at any stage in the development of the offset . . . will undermine the offset." The court held that this mitigation measure violated CEQA by containing unenforceable performance standards and by deferring and delegating mitigation, but also noted: "Our decision is not intended to be, and should not be construed as a blanket prohibition on using carbon offsets—even those originating outside of California—to mitigate GHG emissions under CEQA." In comparison, NHPH Mitigation Measure GHG-1 commits UCSF to monitoring emissions annually and acquiring high-quality voluntary carbon offset credits, prioritizing local and in-State offsets to achieve and maintain carbon neutrality for the NHPH.

The comment also suggests that, as in *Golden Door II*, the voluntary market offsets do not meet CEQA's enforceability requirement for mitigation because NHPH Mitigation Measure GHG-1 does not "require the protocol itself to be consistent with CARB requirements." Again, it is incorrect to compare this project to *Golden Door II*. There, the court noted that the "CARB Protocols are the heart of cap-and-trade offsets—but the word "protocol" is not even mentioned in M-GHG-1." In contrast, NHPH Mitigation Measure GHG-1 expressly states on page 4.7-40 of the NHPH Draft EIR: "The protocols of each registry . . . and UC's own internal screens and criteria shall be used to demonstrate that the carbon offset credits provided are real, permanent, additional, and have been independently verified as adhering to its applicable project protocols." Additionally, NHPH Mitigation Measure GHG-1 requires voluntary carbon offsets to originate from a voluntary carbon credit registry that The Climate Registry recognizes, be verified by a major registry, and be consistent with UC's internal screens and criteria developed as part of the Carbon Neutrality Initiative (CNI) to ensure that any use of voluntary offset credits will result in additional, verified GHG emission reductions. These requirements specifically address the enforceability and adequacy of voluntary offset credits.

O-SM-37 The comment suggests the NHPH Mitigation Measure GHG-1 is unenforceable because the NHPH Draft EIR does not provide a description of UC's internal screens to be used, in addition to the protocols of each registry, to demonstrate that the voluntary carbon offset credits provided are real, permanent, additional, and have been independently verified as adhering to its applicable project protocols.

UC is expending considerable resources to ensure its' purchased voluntary offsets will be "real, permanent, quantifiable, verifiable, and enforceable." The UC Berkeley Carbon Trading Project in collaboration with Carbon Direct, has developed a database that contains all carbon offset projects, credit issuances, and credit retirements listed by four major voluntary offset project registries: Climate Action Reserve (CAR), American Carbon Registry (ACR), Verra (VCS), and Gold Standard. These four registries generate almost all of the world's voluntary market offsets and also include projects eligible for use under the California / Quebec linked cap-and-trade programs. This database is meant to increase the transparency of the carbon offset market, providing the offset buyer (UCSF) with the ability to see offset credits and projects in a single database. Dynamic charts and tools allow the offset buyer to see trends over time, and review the projects and credits on the market by location, type, registry, etc. The database[6] was specifically developed by the UC Berkeley researchers to explore offset credit types and offset quality.

UCSF has also established an internal committee to screen offset purchases to ensure that they are "real, permanent, quantifiable, verifiable, enforceable, reflecting the educational mission and the values of the institution. The committee consists of representatives of the Sustainability office, faculty, students, the utilities purchasing group, and Budget and Planning staff. As an example of campus-specific, offset procurement, UCSF is currently in the process of acquiring a CARB certified offset that involves the removal and disposal of refrigerants from the campus with a high global warming potential.

With respect to voluntary GHG offsets, UC Office of the President has updated the UC *Sustainable Practices Policy* to include direction on the procurement of voluntary carbon offsets by UC campuses, medical centers and national laboratories. The updated policy notes the following with respect to voluntary carbon offsets:

a. *The University will prioritize direct reductions of its covered scope 1, 2, and 3 emissions. This Policy does not require the University, as a system and as individual campuses and units, to purchase carbon offsets to meet their carbon neutrality goals; instead, it sets priorities and minimum standards if they decide to purchase offsets. In meeting the UC Sustainable Practices*

6 Available at: https://gspp.berkeley.edu/faculty-and-impact/centers/cepp/projects/berkeley-carbon-trading-project/offsets-database

Policy climate goals as outlined in section III.C., the University will use offsets as a transitional strategy while implementing all feasible reductions in its scope 1, 2, and 3 emissions. The University will reevaluate and update section III.C and V.C of the Sustainable Practices Policy by 2025.

b. *The University will only use high-quality offset credits to meet its climate protection goals, beyond its requirements under California's cap-and-trade program and will draw on the University's academic capacity to vet the quality of all voluntary offset credits it uses.*

c. *To align its voluntary offset program with its research, education, and public service mission, the University will choose offset projects that demonstrate or advance scalable climate solutions aligned with a path towards deep decarbonization; prioritize projects that advance University research and support student education; prioritize projects with health and social justice benefits, and benefits to the UC community and communities surrounding the campuses; and prioritize projects with the potential for climate benefits well beyond the credited reductions, recognizing the urgency of near-term reductions. The University will analyze the ecological, health, social, and human rights impacts of its offset decisions to avoid negative outcomes for low-income communities, communities of color, and other marginalized populations and to prioritize projects that benefit these communities.*

d. *The University will develop and implement its voluntary offset procurement strategy in a way that advances understanding of and models how institutions of higher education and in other sectors can use offsets as an effective climate mitigation strategy aligned with their institutional mission.*

This UC direction regarding voluntary offsets has come out of work performed over the last two years under a UC Global Climate Leadership Council-funded project: UC's Offset Strategy Development. The work involved (1) research on the quality of offsets available on the voluntary offset market, resulting in practical guidance on how UC can ensure offset purchases represent real additional emissions reductions, and (2) piloting its own offset projects originating from UC research and operations.

Further, the University has defined for its internal use that offsets will be considered:

i. Additional if the credited reductions would not have occurred were it not for the offset program or the University's climate protection policy. Additionality can be assessed for an individual project or for a project type

ii. Durable if there is a very high likelihood that they will remain out of the atmosphere for 40 years on-site or through commitments to replace credits.

iii. Enforceable if the University is able to reasonably ensure that its quality standards are met. The University recognizes that not all offset credits available for purchase from projects registered in the major offset registries represent high-quality emissions reductions.

The University will evaluate the quality of each offset project it uses, involving a peer review process overseen by the Carbon Abatement Technical Committee (CATC). The CATC will be made up of at least one representative from each University of California campus, LBNL, Office of the President, and at least one student and one faculty member representative from the University. This review will include evaluating individual projects, or types of projects, against the University's offset quality criteria by appropriate experts. Peer review is in addition to third-party verification.

Credits are considered to be real if the quantity of credits generated and used by a project, or a project type, does not exceed conservative estimates of the actual effect of the project, or the set of projects of the project type, on emissions. When there is uncertainty in emissions reduction/removal estimates, estimates are conservative when they are more likely to underrepresent than to over-represent actual emissions reductions/removals achieved. Evaluations will take into account the following factors as detailed in the UC Offset Procurement Guidelines: project additionality, conservativeness of methods used to estimate emission reductions including the baseline, and effects outside of project boundaries such as through leakage. The results of these evaluations, including quantitative assessments of credit quality and justifications for the assumptions and determinations made, will be released publicly for all offset projects or project types the University uses to meet its climate targets.

UCSF shall continue to monitor the voluntary carbon offsets market and implement offset procurement procedures that are in compliance with state laws and regulations concerning voluntary carbon offsets, as well as in alignment with any further changes and refinements to the UC *Sustainable Practices Policy* related to greenhouse gases and offset procurement.

O-SM-38 This comment asserts that NHPH Mitigation Measure GHG-1 is deferred mitigation and questions whether sufficient availability of offsets exists to address the quantities needed.

The comment suggests that NHPH Mitigation Measure GHG-1 is "deferred mitigation" because its internal screening process for procurement of voluntary GHG offsets is not specified in the NHPH Draft EIR. As explained in the NHPH Draft EIR and updated in this Final EIR, NHPH Mitigation Measure GHG-1 specifically states: "Carbon offset credits used for this purpose shall originate from a voluntary carbon credit registry that TCR recognizes, such as: CAR, ACR, or Verra (other registries are also applicable). Offset credits in this case shall be registered, transferred, and retired at such registries. The offsets will also be subjected to an internal UC peer review process. The protocols of each registry, and UC own internal screens and criteria, shall be used to demonstrate that the carbon offset credits provided are real, permanent, additional, and have been independently verified as adhering to its applicable project protocols. For

this purpose, local (within the air district) and in-state carbon offset credits shall be prioritized over in-nation offset credits." As further explained in the NHPH Draft EIR, if sufficient local and in-state offset credits are not available, UC will purchase CARB- conforming or equivalent national offset credits registered with an approved registry. Please see UC's updated *Sustainable Practices Policy* in response to Comment O-SM-37, above.

With respect to the availability of offsets, a recent study published by Trove Research and University College London predicts that demand for carbon offsets will increase fivefold or even tenfold over the next decade as companies, governments, and projects seek to deliver on their net-zero emissions pledges.[7] As demand for carbon credits increases, the costs of undertaking emission reduction projects will rise as lower cost projects are used up, raising the price of offsets up to $50 per $MTCO_2e$ by 2030 and $100 per $MTCO_2e$ by 2050. As with any market-based system, the resulting price increase will make a larger set of offset projects financially viable; the higher prices will drive real investment in new projects to reduce emissions. Also as the study notes, as the cost of using carbon credits rises, investing in direct GHG reduction measures will become more attractive.

Trove Research also conducted a voluntary carbon market quarterly update in April 2021, which found that global surplus carbon credits totaled 399 million in the first quarter of 2021.[8] The Climate Action Reserve has issued nearly 165 million offset credits and has retired more than 48 million of the credits for projects within the U.S.; this suggests that more than 116 million offset credits are currently available for projects in the U.S. through the Climate Action Reserve.[9,10] The American Carbon Registry has issued nearly 188 million offset credits and has retired nearly 13 million of the credits for projects within the U.S, which suggests that more than 175 million offset credits within the U.S. are currently available through the American Carbon Registry.[11,12] Element Markets, an offset credit broker, has issued 50 million offset credits to date and currently represents more than 40 projects in the U.S.

UC's current (2021) estimate of the total offset volumes of the 10 campus sites required to achieve climate neutrality could be as high as a maximum of 650,000 metric tons CO2e (tCO2e) in 2025, declining to 450,000 tCO2e by 2030. The voluntary carbon market has grown over five-fold over the past five years. The current quantity of offset credits issued in the US is 395,396,035 tCO2e.

7 Trove Research, 2021. Future Demand, Supply and Prices for Voluntary Carbon Credits – Keeping the Balance, June 1, 2021.
8 Ibid.
9 Climate Action Reserve, 2021. Projects, July 16, 2021.
10 Climate Action Reserve, 2021. Map of Projects, July 16, 2021.
11 American Carbon Registry, 2021. Projects, July 16, 2021.
12 American Carbon Registry, 2021. Retired Credits, July 16, 2021.

The quantity of offsets credits remaining, unredeemed, in the U.S. is 140,660,786 tCO2e. The current quantity of CARB offset credits issued is 248,694,864 tCO2e. The quantity of offset credits remaining, unredeemed, is 83,307,503 tCO2e.

This information indicates that sufficient offset credits are available to satisfy the project's obligation through NHPH Mitigation Measure GHG-1, with more offset credits being created in the future.

O-SM-39 The comment contends that because the proposed NHPH would result in an increase in GHG emissions, it is fundamentally in conflict with the State's GHG reduction targets for 2030 and 2050. The comment also suggests that the analysis of consistency with the 2017 Update to the State Scoping Plan is not a necessary or applicable component of assessing the NHPH's consistency with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

The NHPH Draft EIR addresses GHG emissions significance criteria (b) "conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases" on pages 4.4-40 through 4.7-43 by analyzing a number of plans, including the 2017 Scoping Plan Update, in order to address this topic robustly.

First, the NHPH's consistency with UC plans and policies was analyzed and followed by an assessment of consistency of the NHPH with 2040 Plan Bay Area, CARB's 2017 Scoping Plan Update, and Executive Order S-3-05 to fully consider the range of local, regional and statewide planning efforts. The determination of whether NHPH would conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHG is presented in Impact GHG-2 in the EIR. By virtue of the NHPH's consistency with the updated GHGRS and implementation of NHPH Mitigation Measure GHG-1, thereby achieving consistency with the CNI, the NHPH would be consistent with CARB's 2017 Scoping Plan Update and with Executive Order S-3-05, which established a goal of reducing California's GHG emissions to 80 percent below the 1990 level by the year 2050. As indicated in the EIR, the GHGRS was recently updated to address UC's CNI (adopted after 2014) and to include emissions from the CPHP inclusive of the NHPH. It should be noted that UC's CNI is more stringent than all state requirements for reduction of GHG emissions, including AB 32, SB 32, and 2017 Scoping Plan.

Further, in its recently released *Draft Justification Report: CEQA Thresholds for Evaluating Land Use Projects and Plans*, BAAQMD indicates that it is embracing carbon neutrality as its threshold of significance for land use development projects. As stated in this document, a land use project's "fair share" contribution to GHG reduction will not necessarily include everything that

will need to happen in order to achieve carbon neutrality by 2045. There will likely be certain aspects of achieving carbon neutrality that are beyond the scope of how a land use project is designed and thus cannot reasonably be allocated to its "fair share." To determine a proposed land use project's "fair share," the analysis should therefore focus on the design elements that need to be incorporated into the project in order to lay the foundation for achieving carbon neutrality by 2045. Therefore, it is not incumbent upon a land use development project to reduce GHG emissions statewide, but rather, to incorporate appropriate design elements into a project to reduce GHG emissions. As indicated in Table 4.7-4, the proposed NHPH includes 11 specific design measures that are applicable pursuant to UC *Sustainable Practices Policy* and existing GHGRS measures. Therefore, the analysis of the Draft EIR appropriately addresses the state's goals to reduce GHG emissions.

With respect to inclusion of the 2017 Update to the State Scoping Plan as a component of assessing the NHPH's consistency with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases, as stated above, the Draft EIR included a consistency analysis with the updated GHGRS inclusive of UC's CNI which is more stringent than all state requirements for reduction of GHG emissions, including AB 32, SB 32, and 2017 Scoping Plan. The analysis included consistency with the 2017 Scoping Plan Update, in order to address this topic robustly.

O-SM-40 This comment raises concerns that the mitigation measures identified in the Draft EIR are insufficient and should include other feasible GHG reduction strategies.

As stated on page 4.7-36 of the NHPH Draft EIR, NHPH Mitigation Measure GHG-1 is identified to reduce GHG emissions to a net zero increase and a less than significant impact with mitigation. To achieve the net zero increase, NHPH Mitigation Measure GHG-1 sets forth a numerical performance standard based on the estimated GHG emissions generated for the proposed NHPH (27,449 MT CO_2e per year) to be offset. Consequently, GHG emissions associated with the NHPH would be reduced to a less-than-significant level with implementation of NHPH Mitigation Measure GHG-1. Beyond the implementation of NHPH Mitigation Measure GHG-1, the project would implement the additional GHG reduction measures identified in Table 4.7-4 on pages 4.7-37 and 4.7-38 of the NHPH Draft EIR. These measures include a minimum level of LEED Gold Certification for the proposed NHPH, that the project is designed, constructed, and commissioned to outperform ASHRAE 90.1 - 2010 by at least 30 percent or meet the whole-building energy performance targets, and implementation of lighting with efficiencies surpassing Title 24 requirements. Furthermore, in compliance with UC *Sustainable Practices Policy*, 92 percent of the imported electricity currently used at UCSF is carbon free and UCSF has committed that 100 percent of its imported electricity shall be carbon free by 2025. So GHG emissions from imported electricity usage under full operation of the NHPH are essentially avoided. Similarly, no new

natural gas service is included in the New Hospital for heating or any other purposes, and GHG emissions from natural gas combustion in the building are also avoided by design. UCSF is also implementing an aggressive transportation demand management program to minimize vehicle trips to all its campus sites, including Parnassus Heights, which will apply to the New Hospital and will help towards minimizing GHG emissions from travel to and from the project. Therefore, UCSF is not relying solely on carbon offsets to mitigate the project's impacts.

Please also see response to Comment O-SM-37 above which presents the updated UC *Sustainable Practices Policy*. The update to the policy addresses reduction of GHG emissions and the use of offsets. The policy clearly states that "The University will *prioritize direct reductions* of its covered scope 1, 2, and 3 emissions. This Policy does not require the University, as a system and as individual campuses and units, to purchase carbon offsets to meet their carbon neutrality goals; instead, it sets priorities and minimum standards if they decide to purchase offsets. In meeting the UC *Sustainable Practices Policy* climate goals as outlined in section III.C., the University will use *offsets as a transitional strategy while implementing all feasible reductions in its scope 1, 2, and 3 emissions*"

The "cost benefit analysis" that the commenter is referring to was a rough analysis of the cost of purchasing offsets that might be needed for the NHPH and was prepared in another context, and not for this EIR or for the purpose of informing the formulation of NHPH Mitigation Measure GHG-1.

The commenter asserts that an internal email at UC suggests that "the DEIR does not need to analyze whether NHPH could be engineered to reduce emissions." The commenter then reproduces text from an email. Regarding the email text that is reproduced in this comment, please note that the commenter is not from the University of California and provided the comment in the context of a UC Berkeley housing project. The comment does not represent UC policy nor does it concern the NHPH.

In summary, because identified project sustainability elements and project design in combination with NHPH Mitigation Measure GHG-1 are sufficient to achieve a less than significant impact, no further GHG reduction measures are necessary should any others exist that are technically or economically feasible.

O-SM-41 The comment raises concerns that the NHPH Draft EIR did not disclose the human health risks associated from the combination of construction and operation of the NHPH.

The health risks impacts associated with the combination of NHPH construction and operation are appropriately addressed in the cumulative impact section on page 4.2-44 of the NHPH Draft EIR. Here the NHPH Draft EIR states:

> "Because the project-level construction health risk impact (an excess cancer risk of 5.6 in one million) would be less than significant after mitigation as described in Impact AIR-3, and the resultant increased operational cancer risk from cumulative operations would be 18.9 in one million, the total increased cancer risk from cumulative combination of operational and construction-related emissions would be 24.5 in one million which is below the 100 in one million threshold. Additionally, given that there are no impacted CARE communities in the campus site vicinity, the NHPH's cumulative impact to local health risk and hazards would be less than significant."

O-SM-42 The commenter references comments made by Andrew Coleman on the NHPH Draft EIR related to potential impacts on neighboring properties due to direct or indirect earth shaking without use of a microseismic array. Please see response to Comment O-SM-102.

O-SM-43 The commenter indicates that Dr. Smallwood has identified numerous shortcomings in the NHPH Draft EIR's formulation of baseline conditions, analysis of NHPH impacts, and formulation of mitigation measures for biological impacts.

Please see responses to Comments O-SM-77 to O-SM-101.

O-SM-44 The commenter asserts that the NHPH development would contrast sharply with the surrounding areas, and would violate San Francisco's zoning standards. As quoted in the excerpt cited by the commenter, the NHPH Draft EIR Impact AES-2 acknowledges that the New Hospital would contrast sharply in height and scale with the nearby residential neighborhood. Further, the NHPH Draft EIR notes that the New Hospital would represent a prominent newly visible feature in the viewsheds from nearby neighborhoods. This circumstance is evident in several of the visual simulations prepared in support of the NHPH Draft EIR. With respect to City zoning, NHPH Impact AES-2 also acknowledges that the proposed New Hospital would exceed the height limits of the City's 65-D and 220-F Height and Bulk Districts, and would represent a substantial increase in development, and associated increase in scale and density, on the campus site.

The commenter asserts that the NHPH Draft EIR conclusion regarding scenic quality is based on legal arguments that the building i) would be consistent with the 2014 LRDP, as amended; and ii) would not conflict with applicable zoning and other regulations governing scenic quality; and that neither of these arguments have merit, and do not overcome the factual support for a significant visual and aesthetic impact based on the NHPH's sharply contrasting size and bulk.

The commenter asserts that the first legal argument is without merit because the argument conflicts with the NHPH Draft EIR's assertion of a January 2020 baseline. However, the NHPH Draft EIR environmental setting, appropriately

describes the visual environment as it existed in January 2020. The NHPH Draft EIR aesthetic regulatory framework discussion also acknowledged notable subsequent changes in the regulatory environment that had occurred since January 2020, including Amendment No. 7 to the 2014 LRDP that was approved in January 2021 to incorporate the CPHP and make other conforming changes.

As discussed in Impact AES-2, pursuant to the University of California's constitutional autonomy, development and uses on property under the control of the University that are in furtherance of the University's educational purposes are not subject to local land use regulation. The University is the only agency with land use jurisdiction over programs and projects proposed on the Parnassus Heights campus site, and the 2014 LRDP, as amended, is the applicable land use plan adopted by the University for guiding the development of the campus site while avoiding or mitigating its environmental impacts. As such, the UCSF 2014 LRDP, as amended, governs scenic quality at the campus site, and, accordingly, potential conflicts of the NHPH with the 2014 LRDP as amended are used as the basis to determine if the NHPH would have a significant impact related to scenic quality.

As evaluated in Impact AES-2, the proposed New Hospital would be consistent with applicable 2014 LRDP objectives governing scenic quality. While Amendment #7 clarified that 2014 LRDP sub-objectives 1B and 1C do not apply to the New Hospital in recognition of the substantial amount of space required for the New Hospital and need for proximity to the existing hospitals, UCSF would make efforts to come as close as possible to meeting these objectives, as feasible. The design of the New Hospital would be consistent with UCSF's Physical Design Framework and Parnassus Heights Design Guidelines as amended. The New Hospital would also be consistent with applicable CPHP objectives related to space and urban design. Given the above factors, the New Hospital would not conflict with the 2014 LRDP objectives related to scenic quality, and the impact would be less than significant.

The commenter asserts that the second legal argument is without merit because even if San Francisco zoning standards are inapplicable, it may not be used to foreclose consideration of substantial evidence supporting a fair argument of significant impact. However, as described above, Impact AES-2 provides a detailed evaluation supported by substantial evidence to demonstrate that the NHPH would not conflict with the 2014 LRDP as amended.

O-SM-45 As explained in the response to Comment O-SM-10, the cumulative wind analysis in the NHPH Draft EIR, which includes the other three CPHP Initial Phase projects (RAB, Irving Street Arrival, and initial Aldea Housing densification) as well as longer-term CPHP development to 2050, is appropriately less detailed than the NHPH Draft EIR's project-specific analysis of the NHPH—a presentation that the commenter explains is consistent with

"well settled" CEQA law. The commenter incorrectly asserts, with no evidence, that project-specific designs for the other Initial Phase projects (and possibly other CPHP projects; the commenter is not specific on this point) are available and should be included in a quantitative wind tunnel test along with the NHPH. Yet the commenter provides no documentation in support of this claim. It is noted that UCSF announced the selection of an architectural team for the proposed RAB only in July 2021, and the complexity of such a project precludes the completion in the period that has elapsed since then of design drawings at the level of detail necessary for wind tunnel testing.[13]

With respect to the analysis of the other three CPHP Initial Phase projects presented in the CPHP Final EIR, that EIR explained (page 4.1-21) that the evaluation of potential wind impacts of these three projects undertaken through a "screening-level analysis," using computational wind engineering and not wind tunnel testing. The analysis was based on a "simple massing model" of proposed CPHP development, "and not on actual building designs, which have not yet been prepared." Finally, while the computational analysis can "reliably predict wind *comfort* conditions across a relatively wide area, such as the Parnassus Heights campus site," it "cannot identify exceedances of the wind *hazard* criterion due to its inability to reliably simulate turbulence using currently accepted methods" (emphasis added). Accordingly, the analysis in the CPHP Final EIR concluded, on page 4.1-48, that the Irving Street Arrival could potentially result in a significant wind impact along Carl Street and that the RAB could potentially result in a significant wind impact along Parnassus Avenue. Accordingly, these buildings would be subject to CPHP Mitigation Measure AES-4 in the CPHP Final EIR, which would require that wind-tunnel testing of the specific designs of these buildings be implemented to reduce wind impacts as feasible. However, in the absence of wind tunnel testing of specific building designs, the CPHP Final EIR found that "it cannot be concluded that effects would be reduced to a less than significant level. Therefore, this impact would be significant and unavoidable with mitigation." This is precisely the conclusion reached with respect to cumulative development—including the three other CPHP Initial Phase projects—in the Draft EIR for the proposed NHPH, as explained in the response to Comment O-SM-10, above. As stated there, despite the commenter's assertion that the NHPH Draft EIR's cumulative analysis "deprives the public of a project-level wind tunnel analysis" of the cumulative projects, this is not the case, because all of the cumulative projects that would be greater than 80 feet in height and therefore could potentially result in adverse effects on pedestrian-level winds would be subject to NHPH Mitigation Measure C-AES-3. And, as explained herein, these projects would also be subject

[13] UCSF, "UCSF Selects Design Team for Parnassus Research and Academic Building," Campus News, July 15, 2021. Available on the internet at: https://www.ucsf.edu/news/2021/07/421001/ucsf-selects-design-team-parnassus-research-and-academic-building. Accessed March 21, 2022.

to the very similar and complimentary language of CPHP Mitigation Measure AES-4 in the CPHP Final EIR.

O-SM-46 The commenter briefly summarizes the proposed NHPH project. No response is required.

O-SM-47 The commenter makes a general statement that the NHPH Draft EIR fails to adequately evaluate the Project's hazards and hazardous materials, air quality, health risk, and greenhouse gas impacts; that emissions and health risk impacts associated with construction and operation are underestimated and inadequately addressed.

With respect to specific comments raised regarding on hazards and hazardous materials, please see response to Comment O-SM-48, below. With respect to specific comments raised on air quality and health risks, please see response to Comments O-SM-49 through O-SM-56, and responses to Comments O-SM-62 through O-SM-67, below. With respect to specific comments raised on greenhouse gas emissions, please see responses to Comments O-SM-57 through O-SM-61, and response to Comments O-SM-68 through O-SM-74.

The commenter asserts that an updated EIR should be prepared to adequately assess and mitigate the potential hazards and hazardous materials, air quality, health risk and greenhouse gas impacts that the project may have on the environment.

All environmental impacts in the NHPH Draft EIR, including those associated with potential hazards and hazardous materials, air quality, health risk and greenhouse gas emissions are adequately addressed and mitigated to the extent feasible. Further, as demonstrated in the individual responses provided to the comments raised, none of the specific issues identified in the comments, or response to these comments, result in any of the conditions of Section 15088.5(a) being met. Thus, UCSF has determined that recirculation of the Draft EIR on the issues raised by the comments is not warranted.

O-SM-48 The commenter indicates a Phase 1 Environmental Site Assessment was not prepared for the Project site, which can identify and disclose hazardous waste issues that may present impacts to the public.

The commenter is referred to NHPH Draft EIR Section 4.7, *Hazardous Materials* section which describes the background conditions on the project site and vicinity. As described on NHPH Draft EIR Section 4.9, page 4.8-7, a review of relevant regulatory databases was conducted in support of the EIR, including the Department of Toxic Substances Control Envirostar Database, and the State Water Resources Control Board Geotracker Database. These databases indicate there are no cases recorded within the NHPH project site as being impacted by hazardous materials releases, and the two cases in the project site vicinity were

closed in accordance with applicable regulatory agency oversight, with no further action needed.

NHPH Draft EIR Impacts HAZ-1 and C-HAZ-1discuss that as a separate planned project, the existing buildings on the New Hospital site, including the LPPI and support structures, would be removed prior to development of the New Hospital. The NHPH Draft EIR reports that a Preliminary Hazardous Materials Survey of these existing buildings indicates presence of former commonly-used hazardous materials in the buildings, including asbestos, lead, PCBs and mercury. The NHPH Draft EIR discusses that any existing hazardous materials associated with these facilities; and similarly, those which may be encountered within Moffitt and Long Hospitals when renovating those buildings, would be removed pursuant to applicable federal, State and local regulations; and as such there would be a less than significant impact related to exposure to existing hazardous building materials at these sites.

In addition, implementation of NHPH Mitigation Measure HAZ-1 (Excavation Management Plan) would ensure that if naturally occurring asbestos is present in areas that would be disturbed during construction, exposure risks would be reduced to less than significant. Also, implementation of NHPH Mitigation Measure HAZ-4 (Soil Management Plan) would ensure risks to the public or environment as a result of exposure to previously unknown contamination or hazardous release sites would be less than significant.

O-SM-49 In this introductory comment, the commenter states that their review of the air quality modeling included in the NHPH Draft EIR appendix concludes that the emissions from the construction and operation of the proposed NHPH are underestimated, and therefore the project's air quality impacts are inadequately analyzed in the NHPH Draft EIR. The commenter is referred to responses to Comments O-SM-50 through O-SM-76, below, which show that the air quality modeling in the NHPH Draft EIR is accurate. Accordingly, the air quality, health risk, and GHG impacts in the NHPH Draft EIR are accurately analyzed, and an updated EIR is not required.

O-SM-50 The commenter raises concerns that adjustments made to the default values for the CalEEMod model to estimate construction emissions have not been adequately justified.

As the commenter states, changes were to usage hours and some horsepower values. These changes were made to provide a project-specific analysis with data provided by the UCSF construction team, and also include equipment types which are not in the default database of the CalEEMod model. UCSF's construction team's response to a request for information which provided this project-specific information is included in **Appendix AIR-A** in this Final EIR. These data provide the basis for a justifiable change to the model default values,

and consequently, no further revisions to the calculation of air pollutant emissions are warranted.

O-SM-51 The commenter raises concerns about changes made to haul trip and worker trip default values. As stated above, changes were made to model default values to provide a project-specific analysis with data provided by the UCSF's construction team. These data included data points such as the number of truck trips, workers and haul truck capacity. The construction team's response to a request for information which provided this project-specific information is included in **Appendix AIR-A** in this Final EIR. These data provide the basis for a justifiable change to the model default values, and consequently, no further revisions to the calculation of air pollutant emissions are warranted.

O-SM-52 The commenter suggests that the UCSF construction contractor's response to the request for information should be included in the NHPH EIR. The construction team's response to a request for information which provided project-specific information is included in **Appendix AIR-A** in this Final EIR

O-SM-53 The commenter is concerned that some of the calculation of haul truck trips used an assumed truck capacity of 20 cubic yards, rather than the CalEEMod default value of 16 cubic yards. As stated above, changes were made to model default values to provide a project-specific analysis with data provided by UCSF's construction team. These data included data points such as the number of truck trips, workers and haul truck capacity. The construction team's response to a request for information which provided this project-specific information is included in **Appendix AIR-A** in this Final EIR. Trucks hauling 20 cubic yard of material would consist of a combination of two, 10-cubic yard trailers. These data provide the basis for a justifiable change to the model default values, and consequently, no further revisions to the calculation of air pollutant emissions are warranted.

O-SM-54 The commenter is concerned that some of the calculation of construction worker trips are different than the CalEEMod default values. As stated above, changes were made to model default values to provide a project-specific analysis with data provided by UCSF's construction team. These data included data points such as the number of truck trips, workers and haul truck capacity. The construction team's response to a request for information which provided this project-specific information is now included in the revised air quality appendix as part of his Final EIR. These data provide the basis for a justifiable change to the model default values, and consequently, no further revisions to the calculation of air pollutant emissions are warranted.

O-SM-55 The commenter reiterates concern that changes to the CalEEMod default values to conduct a refined project-specific analysis may have resulted in an underestimation of construction emissions that may result in a different finding of significance.

As stated above, changes were made to model default values to provide a project-specific analysis with data provided by the UCSF's construction team. These data included data points such as the number of truck trips, workers and haul truck capacity. The construction team's response to a request for information which provided this project-specific information is now included in **Appendix AIR-A** in this Final EIR. These data provide the basis for a justifiable change to the model default values, and consequently, no further revisions to the calculation of air pollutant emissions are warranted. Further, as shown in Table 4.2-7 of the NHPH Draft EIR, construction-related unmitigated emission of oxides of nitrogen (NOx) are approximately half of the BAAQMD significance threshold without mitigation while the unmitigated emissions of reactive organic gases (ROG) are one fifth of the applicable threshold and emissions of particulate matter substantially less than the applicable thresholds.

O-SM-56 The commenter takes issue with the justification provided for the adjustment to zero value for electricity-related GHG emissions in the CalEEMod model. The commenter then goes on to quote text of the NHPH Draft EIR that provides further support for UCSF's clean power program which is on the verge of achieving carbon neutrality.

The most recent third-party verified inventory for UCSF for year 2020 shows that 92 percent of all purchased electricity was carbon free. This achievement has been third-part verified and demonstrates that UCSF is already approaching its 2025 goal of net zero electricity, so the assumption that the proposed NHPH would not result in an increase in electricity-related GHG emissions is justifiable, as are the changes to the model default values.

O-SM-57 The commenter recommends that UC's commitment to carbon-free electricity should be included as a mitigation measure so as to ensure its achievement, as project design features that are dropped from consideration would no longer provide their associated emissions reduction.

The commenter conflates UC's commitment to 100 percent carbon-free electricity with a design feature of the project. The most recent third-party verified inventory for UCSF for year 2020 shows that 92 percent of all purchased electricity was carbon free. Future contracts for the remaining 8 percent will ensure carbon free procurement. So the achievement of 100 percent carbon-free electricity is on the verge of realization five years prior to the target date and is not an uncertain design feature of the NHPH that could be easily overlooked, as suggested by the comment.

O-SM-58 This commenter is concerned that they cannot verify the portion of UCSF's purchased electricity that is carbon free.

UC's *Sustainable Practices Policy* sets a standard that by 2025, each campus and health location will obtain 100 percent clean carbon-free electricity ([14]). UCSF reports to the Regents annually on this policy and tracks this specific metric closely. As identified in the NHPH Draft EIR (page 4.5-4) - UCSF purchased 92 percent clean electricity for CY 2019. For the most recent verified year (2020), UCSF also purchased 92 percent clean electricity (see Table below). The California Energy Commission has not yet released utility provider power content labels yet for 2021. UCSF expects that when they release this data – the UCSF percentage will be 92 percent again (or slightly greater). Future contracts for the remaining 8 percent will ensure carbon free procurement. So the achievement of 100 percent carbon-free electricity is on the verge of realization five years prior to the target date and is not an uncertainty of the future.

Purchased Electricity (Source)	Total (MWH)	Carbon Free (MWH)	Carbon Free (%)
UCOP	46,543	46,543	100%
WAPA	6,335	6,335	100%
PG&E	65,733	55,873	85%
CPSF	4,744	4,573	96%
Solar PPA	2,314	2,314	100%
Total (MWH)	**125,668**	**115,638**	**92%**

NOTE: MWH = megawatt hours

O-SM-59 The commenter cites the UC 2021 Annual Report on Sustainable Practices, which references UC's Carbon Neutrality Initiative (CNI), and contends that the CNI does not commit UCSF to net zero electricity and takes issue with the idea that UCSF intends to use carbon offsets to achieve net zero emissions.

As indicated in the UC 2021 Annual Report on Sustainable Practices, UC will purchase the vast majority of its electricity as carbon-free. Although a small portion of UCSF's procured electrical demand (8 percent) is currently not carbon free UCSF is ahead of schedule to attain 100 percent carbon neutrality for its procured electrical demand by 2025 and thus meet the goals of the CNI. This has occurred for the past two years running, as discussed in response to Comment O-SM-58. Future contracts for the remaining 8 percent will ensure carbon free procurement.

O-SM-60 The commenter is concerned that UCSF's commitment to net-zero GHG emissions does not guarantee that the goal will be achieved and that this possibility is demonstrated by a graph provided from UC's 2017 report on *Overcoming Barriers to Carbon Neutrality*.

[14] https://policy.ucop.edu/doc/3100155/SustainablePracticesBy.

The provided graph shows the trajectory of GHG emission reductions compared to the 2025 timeline. The cited report states that, however, that eliminating direct carbon emissions from the heating and cooling plants cannot occur by 2025 given the large capital costs required to do so. As a result, the Carbon Abatement Technical Group will make recommendations about how to use offsets as a transition measure. It further goes on to say that some stakeholders have jumped to the conclusion that UC's primary solution will be to achieve carbon neutrality solely by purchasing offsets. This is not the case as outlined by Appendix II of 2017 report which identifies 28 separate recommendations to be implemented by the UC campuses.

As stated above in response to Comment O-SM-59, pursuant to UC's *Sustainable Practices Policy*, UCSF reports to the Regents annually to obtaining 100 percent clean electricity and tracks this specific metric closely. UCSF purchased 92 percent clean electricity for CY 2019 and CY 2020. Future contracts for the remaining eight percent will ensure carbon free procurement. Therefore, the achievement of 100 percent carbon-free electricity is on the verge of realization five years prior to the target date and is not an uncertainty of the future.

O-SM-61 This comment reiterates the commenters contention that UCSF's commitment to net-zero GHG emissions does not guarantee that the goal will be achieved.

See response to Comments O-SM-59 and O-SM-60, above.

O-SM-62 The commenter acknowledges that the analysis of potential health risk impacts in the Draft EIR identified a less than significant impact with respect to construction and operational impacts individually.

It is correct that the assessment of health risks from construction and operation were calculated and compared to BAAQMD thresholds separately within the NHPH Draft EIR. This was done in accordance with BAAQMD methodology as indicated in page 8-7 of its most recent CEQA Air Quality Guidelines document (BAAQMD, 2017).

O-SM-63 The commenter raises concerns that the assessment of health risks associated with vehicle emissions focused on delivery vehicles and not on passenger vehicles which the EIR identifies as a major component of criteria pollutant emissions.

This comment is focused on "mobile-source diesel particulate matter (DPM)" but quotes text provided in the NHPH Draft EIR with respect to regional emissions of criteria air pollutants to argue that the health risk analysis may underestimate risks. With respect to passenger vehicles trips generated by the proposed project, the default fleet mix generated by CalEEMod and used in the analysis of air quality impacts indicates that less than one half of one percent of vehicle trips generated by the project would be diesel vehicles that could generate DPM. This

is why the health risk analysis focused on delivery vehicles which were conservatively assumed to all be diesel and to idle for 15 minutes per visit. The risks from these conservative assumptions far outweigh the negligible contribution of diesel fueled passenger vehicle trips.

It should be noted that for health risk analysis, the BAAQMD defines a significant traffic volume roadway as a freeway or arterial roadway with greater than 10,000 vehicles per day (BAAQMD. *CEQA Air Quality Guidelines*. May 2017). As indicated on page 12 of the NHPH Draft EIR Appendix TRANS, the proposed NHPH would generate approximately 2,500 external daily vehicle trips which is far below BAAQMD's recommended volume consideration for inclusion in a health risk assessment analysis under CEQA.

O-SM-64 The commenter suggests that because the assessment of health risks from construction and operation were calculated and compared to BAAQMD thresholds separately within the NHPH Draft EIR that the analysis is in conflict with the guidance for analysis published by the state Office of Environmental Health Hazard Assessment (OEHHA).

It is correct that the assessment of health risks from construction and operation were calculated and compared to BAAQMD thresholds separately within the NHPH Draft EIR. This was done in accordance with BAAQMD methodology as indicated on page 8-7 of its most recent CEQA Air Quality Guidelines document (2017).

It should be noted that, the health risks impacts associated with the combination of NHPH construction and operation are appropriately addressed in the cumulative impact section on page 4.2-44 of the NHPH Draft EIR. Here the NHPH Draft EIR states:

"Because the project-level construction health risk impact (an excess cancer risk of 5.6 in one million) would be less than significant after mitigation as described in Impact AIR-3, and the resultant increased operational cancer risk from cumulative operations would be 18.9 in one million, the total increased cancer risk from cumulative combination of operational and construction-related emissions would be 24.5 in one million which is below the 100 in one million threshold. Additionally, given that there are no impacted CARE communities in the campus site vicinity, the NHPH's cumulative impact to local health risk and hazards would be less than significant."

O-SM-65 The commenter raises concerns that the health risk assessment should have combined risks associated with construction and operation of the NHPH and compared them to the 10 in one million increased cancer risk threshold recommended by the BAAQMD which would result in a significant impact and require all feasible mitigation measures.

Impact C-AIR-2 evaluates the cumulative impacts of construction and operations of the full NHPH plus foreseeable off-site construction projects in the vicinity, and existing background risk of the campus site and surrounding areas. The health risks impacts associated with the combination of NHPH construction and operation are appropriately addressed in the cumulative impact section on page 4.2-44 of the NHPH Draft EIR. Here the EIR found that project-level construction health risk impact (an excess cancer risk of 5.6 in one million) would be less than significant after mitigation as described in Impact AIR-3, the resultant increased operational cancer risk from cumulative operations would be 18.9 in one million, and the total increased cancer risk from cumulative combination of operational and construction-related emissions would be 24.5 in one million which is below the 100 in one million threshold and that the NHPH's cumulative impact to local health risk and hazards would be less than significant. Therefore, because NHPH Mitigation Measures AIR-3 would reduce construction-related health risks to a less than the increased cancer risk threshold of 10 in one million and maintain cumulative increased health risks inclusive of construction, operation, and other foreseeable projects to below the cumulative increased cancer risk threshold of 100 in one million, additional mitigation measures are not required or identified in the NHPH Draft EIR. Please also see response to Comment O-SM-64 above.

O-SM-66 The comment expresses concern that the cumulative analysis of health risk does not adequately address construction of the Initial Phase projects under UCSF's CPHP and operation of the RAB.

Impact C-AIR-2 evaluates the cumulative impacts of construction and operations of the full NHPH plus foreseeable off-site construction projects in the vicinity, and existing background risk of the campus site and surrounding areas. Page 4.2-42 of the NHPH Draft EIR specifically addresses increases in health risks from cumulative construction activities.

As stated on page NHPH Draft EIR page 4.2-42, construction activities for the planned RAB would be located approximately 800 feet from the closest activities for construction of the New Hospital. Receptors potentially affected by the cumulative project demolition and construction activities in 2022 through 2025 would be the existing residences on Irving Street between Arguello Boulevard and 2nd Avenue. The planned Irving Street Arrival construction activities would occur on the Parnassus Avenue across the NHPH site. Residential receptors on Irving Street would be 450 feet away from construction activities of the New Hospital.

Based on a construction HRA prepared for the Irving Street Arrival and RAB projects, the maximum mitigated excess cancer risk would be approximately 1.1 in one million from construction activities for the Irving Street Arrival and the maximum mitigated excess cancer risk from construction activities for the

RAB would be approximately 2.9 in one million. These increased cancer risks, while individually less than significant, would further contribute to the less than significant NHPH mitigated construction excess cancer risk of 5.6 in one million identified in Impact AIR-3. Resultant construction-related cumulative excess cancer risk of 9.6 in one million (1.1 in one million for the Irving Street Arrival plus 2.9 in a million for RAB and 5.6 in a million for NHPH) would be well below the cumulative threshold of 100 in one million. While the maximally exposed individual (MEI) may vary for each of these calculated risk levels and therefore technically these values may not lend themselves to a direct summation, the summed risk is likely conservative because each of the maximum contributions summed above would actually be less at a different cumulative MEI location, and would still result in a value substantially below the cumulative threshold of 100 in one million.

O-SM-67 The commenter reiterates their concern that construction-related health risks and operational health risks of the NHPH should be summed and compared to the BAAQMD recommended threshold of an increased cancer risk of 10 in one million.

It is correct that the assessment of health risks from construction and operation were calculated and compared to BAAQMD thresholds separately within the NHPH Draft EIR. This was done in accordance with BAAQMD methodology as indicated in page 8-7 of its most recent CEQA Air Quality Guidelines document (2017). Also, as indicated in the CPHP Draft Final EIR at page 4.2-61, neither the Irving Street arrival nor the Initial Aldea Housing Densification projects would generate operational TAC emissions.

O-SM-68 The commenter acknowledges that the GHG analysis for the NHPH Draft EIR identified a significant impact resulting from project-related GHG emissions of 27,449 metric tons of CO2 equivalents (CO2e) annually which exceeds the net zero threshold and that the NHPH Draft EIR identified NHPH Mitigation Measures GHG-1 to address this significant impact.

The NHPH Draft EIR addresses CEQA-related GHG impacts with respect to whether construction and operation of the NHPH would generate GHG emissions that may have a significant impact on the environment on pages 4.7-35 through 4.7-40. This impact was identified as significant resulting from project-related GHG emissions of 27,449 metric tons of CO2e annually which exceeds the net zero threshold and the NHPH Draft EIR identified NHPH Mitigation Measures GHG-1 to mitigate this significant impact.

O-SM-69 The comment contends that the assessment of and findings of GHG impacts of the NHPH Draft EIR are incorrect because the modeling of GHG emissions made adjustment to the default factors in the CalEEMod model that were unsubstantiated.

The Draft EIR acknowledges that changes were made to model default values to provide a project-specific analysis with data provided by UCSF' construction team. These data included data points such as the number of truck trips, workers and haul truck capacity. UCSF's construction team's response to a request for information which provided this project-specific information is included **Appendix AIR-A** in this Final EIR. These data provide the basis for a justifiable change to the model default values, and consequently, no further revisions to the calculation of air pollutant emissions are warranted Further, as shown in Table 4.2-7 of the NHPH Draft EIR, the estimated construction-related emission of oxides of nitrogen (NOx) are approximately half of the BAAQMD significance threshold without mitigation while the unmitigated emissions of reactive organic gases (ROG) are one fifth of the applicable threshold and emissions of particulate matter substantially less than the applicable thresholds.

O-SM-70 The commenter contends that the assessment of and findings of GHG impacts of the NHPH Draft EIR are incorrect because the analysis assumes that the proposed NHPH will achieve net zero emissions from purchased electricity.

Please see response to Comment O-SM-59 and O-SM-60, above.

O-SM-71 The commenter contends that the assessment of and findings of GHG impacts of the NHPH Draft EIR is incorrect because the analysis does not consider GHG-related mitigation measures beyond NHPH Mitigation Measure GHG-1. The commenter is also concerned that the use of offsets identified under NHPH Mitigation Measure GHG-1 may be inappropriate.

NHPH Mitigation Measure GHG-1 is identified in the NHPH Draft EIR to ensure that all new emissions of GHGs from both construction and operation are sufficiently offset to realize a net zero increase in GHG emissions for the NHPH. As this measure would reduce GHG emissions consistent with the net zero is appropriately identified in the NHPH Draft EIR as less than significant with implementation of NHPH Mitigation Measure GHG-1.

Beyond the implementation of NHPH Mitigation Measure GHG-1, the project would not rely only on offsets, but would implement the additional GHG reduction measures identified in Table 4.7-4 on pages 4.7-37 And 4.7-38 of the NHPH Draft EIR. These measures include a minimum level of LEED Gold Certification for the proposed NHPH; that the New Hospital be designed, constructed, and commissioned to outperform ASHRAE 90.1 - 2010 by at least 30 percent or meet the whole-building energy performance targets, and the project will include lighting with efficiencies surpassing Title 24 requirements. The New Hospital would be fully electric and would not include the use of natural gas and would thereby avoid GHG emissions from natural gas combustion. All of the purchased electricity used in the hospital would be carbon free. Further the project would be covered by UCSF's TDM program to minimize employee trips and associated GHG emissions.

The identified project sustainability elements and design in combination with NHPH Mitigation Measure GHG-1 are sufficient to achieve a less than significant impact. Therefore, no further GHG reduction measures are warranted or necessary.

As stated in Section 8.5 of this Comments and Responses document, expanded NHPH Mitigation Measure GHG-1 would prioritize local (within the air district) and in-state offset credits over in-nation offset credits. Offset credits shall be third-party verified by a major registry recognized by CARB such as CAR (Climate Action Reserve) or equivalent. If sufficient local and in-state offset credits are not available, UCSF will purchase CARB conforming or equivalent national offset credits registered with an approved registry.

O-SM-72 The commenter contends that the use of offsets identified under NHPH Mitigation Measure GHG-1 may be an inappropriate method of reducing a project's emissions because it sets a bad precedent.

In its most recent (2017) CEQA Air Quality Guidelines, BAAQMD recognizes emission offsets as a viable method of addressing significant air emission impacts. On page 4-2 of these guidelines, BAAQMD states that "facilities also may purchase an emissions reduction credit to offset their emissions." On page 4-12 the guidelines state "In implementing offsite mitigation measures, the lead agency must ensure that emission reductions from identified projects are real, permanent through the duration of the project, enforceable, and are equal to the pollutant type and amount of the project impact being offset."

And on page 5-7, BAAQMD states "If emissions would exceed the *Threshold of Significance*, more refined modeling or mitigation measures to offset emission can be considered.

Because the BAAQMD, the agency with regulatory authority over air quality for the San Francisco Bay Area, acknowledges offsets as a method of mitigating emission impacts under CEQA, as do the CEQA Guidelines, they represent a viable tool in for mitigating the impact of significant GHG emissions.

O-SM-73 The commenter suggests that UCSF inappropriately considers the cost of GHG reduction measures to be used as mitigation.

Please see response to Comment O-SM-40 above.

O-SM-74 This comment recommends that the NHPH Draft EIR identify additional mitigation measures to reduce GHG emissions to the maximum extent feasible.

As stated on page 4.7-36 of the NHPH Draft EIR, NHPH Mitigation Measure GHG-1 is identified to reduce GHG emissions to a net zero increase, and thus, result a less than significant impact with mitigation. To achieve the net zero

increase, NHPH Mitigation Measure GHG-1 sets forth a numerical performance standard based on the estimated GHG emissions generated for the proposed NHPH (27,449 MT CO_2e per year) to be offset. Consequently, GHG emissions associated with the NHPH would be reduced to a less-than-significant level with implementation of NHPH Mitigation Measure GHG-1.

As discussed in response to Comment O-SM-73 above, because identified project sustainability elements and design in combination with NHPH Mitigation Measure GHG-1 are sufficient to achieve a less than significant impact, no further GHG reduction measures are necessary should any others exist that are technically or economically feasible.

O-SM-75 The commenter identifies mitigation measures to address air quality and GHG emissions from a regional transportation plan in southern California, and suggests they be considered for the proposed NHPH.

The identified measures clearly state a that a lead agency (within the jurisdiction of the South Coast Association of Governments) should consider these measures to reduce substantial effects for individual projects that violate air quality standards. Impact AIR-1 of the NHPH Draft EIR identified emissions of construction-related emissions of criteria air pollutants to be less than significant and therefore no measures related to reducing construction-phase criteria air pollutant emissions are warranted. Impact AIR-1 of the NHPH Draft EIR did identify a potential significant impact with respect to emissions of fugitive dust and identified a mitigations measure which consists of dust control measures to be implemented as recommended by BAAQMD, the agency with regulatory authority over air quality for the San Francisco Bay Area to reduce this potential impact to a less than significant level. Most, if not all of the dust control measures in the suggested list are included in NHPH Mitigation Measure AIR-1, Best Management Practices for Controlling Particulate Emissions during Construction.

The recommended list of GHG reduction measures mirror most of those already being implemented by UCs *Sustainable Practices Policy*. Please refer to Table 4.7-4 on pages of 4.7-37 and 4.7-38 of the NHPH Draft EIR to review the correlation of the proposed NHPH with these measures.

Ultimately, because identified project sustainability elements and design in combination with NHPH Mitigation Measure GHG-1 are sufficient to achieve a less than significant impact, no further GHG reduction measures are necessary.

O-SM-76 This conclusory comment reiterates the commenters recommendation of implementing mitigation measures to address air quality and GHG emissions from a regional transportation plan in southern California.

Please refer to the response to Comment O-SM-75, above, with respect to these recommended measures.

O-SM-77 The commenter states that the project inadequately addresses bird-window collisions. Please refer to **Master Response 4: Bird Strikes**.

O-SM-78 The commenter details results of bird surveys conducted by the commenter's consultant in the Reserve on August 20, 2020 and July 16, 2021, which identified numerous bird species. The commenter also lists species from Golden Gate Audubon studies and eBird, which identified additional bird species in the Reserve, and the results of the California Academy of Sciences study of bird strikes in Golden Gate Park. The commenter's effort at cataloguing bird species diversity in the Reserve is noted; however, for purposes of CEQA analysis of the NHPH project, the array of resident and transient species present in the Reserve is not required, or particularly relevant to the project setting or impact analysis. The comment's "on-site" bird sightings in Table 2 (comment letter pg. 75 et seq., pages 10 to 13), appear to be from the Reserve and do not represent bird occurrences on the project site. All native migratory nesting bird species are protected under Migratory Bird Treaty Act (MBTA) and California Fish and Game Code.

O-SM-79 The commenter asserts that the NHPH Draft EIR did not adequately characterize the site's biological resources because it lacked a survey of the birds of Mt. Sutro Open Space Reserve. The commenter includes graphs showing the predicted species richness of the Reserve increases with survey time. The commenter states that the NHPH Draft EIR neglects to include birds known to occur in the Reserve. The NHPH Draft EIR project area includes bordering areas of the Reserve where medical gas tanks will be located; birds such as yellow warbler (*Setophaqa petechia*) which have been observed in the Reserve, are unlikely to occur on developed areas of the campus. A survey was not conducted in the Open Space Reserve, because the Reserve is not part of the Project area for the NHPH. Further, the purpose of the Environmental Setting section of the NHPH Draft EIR Biological Resources section is to characterize the affected environment for biological resources (e.g., special-status species, vegetation communities, and migration corridors) that are present, not to inventory general wildlife species that would not be affected by the project.

The commenter claims that the NHPH Draft EIR omitted discussion of certain special-status birds. Special-status birds were identified as such in the NHPH Draft EIR if they were federal or State listed species, or state species of special concern in California. The Draft EIR also noted that all native migratory bird species are protected under the MBTA, both special-status and common birds. Thus, all bird species identified by the commenter, eBird, Audubon, and others, are included in the environmental baseline and will be protected from impacts to active nests, consistent with State and federal regulations, as provided under NHPH Mitigation Measure BIO-1b.

The commenter notes that he observed a peregrine falcon during his surveys of the Reserve and project site; this species was noted in the NHPH Draft EIR to have

moderate potential to occur in the Reserve. The commenter states that additional special-status species not included in the NHPH Draft EIR were observed at the Project site or in the Reserve. The special-status species table in NHPH Draft EIR Appendix-BIO lists bird species recorded in the vicinity of the project in the California Natural Diversity Data Base and USFWS database; while it is not a comprehensive list, all native migratory birds are protected under the Migratory Bird Treaty Act and California Fish and Game Code 3513, and would be protected from significant impacts by NHPH Mitigation Measures BIO-1b, BIO-2a and BIO-2b, regardless of whether the species is named in the NHPH Draft EIR.

O-SM-80 The commenter requests consideration of the aerosphere, air space above the developed building site, as a habitat medium for wildlife species. CEQA protects general wildlife movement and nursery sites through criterion (d). The NHPH Draft EIR considers bird movement and potential for bird strikes during flight. Please refer to **Master Response 4: Bird Strikes**.

O-SM-81 The commenter states that the NHPH Draft EIR discussion of wildlife movement corridors lacks sufficient discussion of the energetic expense to birds and bats of circumnavigating the New Hospital. Please refer to **Master Response 4: Bird Strikes**.

O-SM-82 The commenter asserts that the New Hospital design and use of glass would introduce substantial bird collision hazards. Please refer to **Master Response 4: Bird Strikes**.

O-SM-83 The commenter notes that numerous species of birds, including special-status species, may be victims of window strikes. **Please refer to Master Response 4: Bird Strikes**.

O-SM-84 The commenter recommends revising the design of the New Hospital to be safer to birds and revising the NHPH Draft EIR to assess bird-window collision impacts. **Please refer to Master Response 4: Bird Strikes**.

O-SM-85 The commenter states that the NHPH Draft EIR discussion of bird strike impacts is insufficient because it lacks quantitative estimation of collision risk. The commenter estimates that more than 1,400 birds could strike the new hospital annually. Please refer to **Master Response 4: Bird Strikes**.

O-SM-86 The commenter discusses factors which contribute to the likelihood of bird-window collisions. Please refer to **Master Response 4: Bird Strikes**.

O-SM-87 The commenter discusses retrofitting windows, siting and other options to reduce bird-window collisions. Please refer to **Master Response 4: Bird Strikes**.

O-SM-88 The commenter states that the NHPH Draft EIR cumulative effects analysis should address the issue of bird window strikes by quantifying bird fatalities

from recent, planned, or foreseeable buildings in San Francisco. Although window strikes are a major source of bird mortality nationwide, no federal or State law protects birds from strike impacts. As discussed in the NHPH Draft EIR, Section 4.3.2, page 4.3-11, the City of San Francisco published bird-safe guidance in 2011. As noted in Section 4.3, UCSF is not subject to local land use regulation whenever using land under its control in furtherance of its educational mission. However, UCSF has voluntarily elected to implement mitigation (NHPH Mitigation Measures BIO-2a and 2b) consistent with the City's *Standards for Bird-Safe Buildings* for new construction, to protect birds from window strikes to the maximum extent feasible, and to reduce this impact to a less than significant level. While construction of the NHPH would increase the likelihood of bird strikes, in the context of the Pacific Flyway, used by an estimated billion birds per year, these impacts are minor, and not cumulatively considerable. A study estimating fatality rates for birds for all San Francisco buildings recently built, planned, or reasonably foreseeable, is not required for this EIR.

O-SM-89 The commenter asserts that more extensive surveys for monarch butterflies are required to formulate appropriate mitigation for this species in the Reserve. As noted in the NHPH Draft EIR, Section 4.3.1, page 4.3-5, monarch butterflies have been recorded in Golden Gate Park, Twin Peaks and other sites in San Francisco. However, overwintering monarchs have never been recorded within the campus site or the Reserve. While eucalyptus stands within the Reserve provide suitable roosting conditions for wintering monarch butterflies, these trees would not be harmed as a result of the Project. Pre-construction surveys of eucalyptus trees in the vicinity of the New Hospital would observe any monarchs present in the trees and NHPH Mitigation Measure BIO-1a would mitigate for any butterflies found by establishing an avoidance buffer for the duration of the overwintering period.

O-SM-90 The commenter asserts that NHPH Mitigation Measures BIO-1b is inadequate because preconstruction surveys are limited in their mitigation effect and they detect only small fractions of bird nests occurring on a project site. While the commenter is correct regarding the difficulty of identifying bird nests and bat roosts in dense vegetation, NHPH Mitigation Measures BIO-1b (and BIO-1c) require a qualified biologist to perform the survey, who is experienced in identification of active nests and roosts. Furthermore, for the NHPH, tree and shrub removal would occur in developed areas of the campus site where nests and roosts are less likely to be present and are easier to observe if they are. The request to provide "substantial compensatory mitigation" is unwarranted, as the project would not cause the loss of habitat for federal or state-listed species.

O-SM-91 The commenter indicates that their comments on the efficacy of preconstruction survey for nesting birds also applies to roosting bats in Mitigation Measure BIO-1c. The preconstruction bat surveys identified in NHPH Mitigation Measure BIO-1c will detect signs of current or recent bat use, or potential for bat presence, and are based on survey methodologies that meet California Department of Fish and

Wildlife guidance. Any potential bat habitat areas will be removed using the bat-safe two-stage approach in NHPH Mitigation Measure BIO-1c. These mitigation measures will protect nesting birds and roosting bats in the path of construction.

O-SM-92 The comment that implementation of the construction worker awareness program (NHPH Mitigation Measure BIO-1d) would not reduce impacts to flying wildlife, including collisions with windows, is noted. The construction worker awareness program is not intended to avoid bird collisions with windows.

O-SM-93 The commenter expresses support for the measures to minimize harm to birds during construction. No revision to this section is requested.

O-SM-94 The commenter recommends a number of specific design changes to reduce bird strikes at the New Hospital, and requests the qualifications of the biological monitor, and suggests that an adaptive approach to fatality monitoring be implemented. Please refer to **Master Response 4: Bird Strikes**.

O-SM-95 The commenter recommends conducting detection surveys for special-status birds at gradients from the proposed New Hospital site and surveys for all wildlife in the Reserve. Please refer to response to Comment O-SM-79.

O-SM-96 The commenter recommends adhering to design guidelines from the American Bird Conservancy, as well as the New York and San Francisco guidelines. Please refer to **Master Response 4: Bird Strikes**.

O-SM-97 The commenter suggests requiring funding contributions to wildlife rehabilitation facilities to cover injuries resulting from construction and operation of the NHPH. Please refer to **Master Response 4: Bird Strikes**.

O-SM-98 The commenter proposes a study design for post-construction fatality monitoring for birds. Please refer to **Master Response 4: Bird Strikes**.

O-SM-99 The commenter provides recommendations to improve post-construction fatality monitoring for birds, including behavioral studies. The University acknowledge receipt of the input on bird protection guidelines and has included them as part of the record of information that will be considered during the decision-making process for this proposed project. Also, please refer to **Master Response 4: Bird Strikes**.

O-SM-100 The commenter recommends incorporating nocturnal surveys to post-construction fatality monitoring for birds. Please refer to **Master Response 4: Bird Strikes**.

O-SM-101 The commenter recommends publication and peer review of data from post-construction fatality monitoring for birds. Please refer to **Master Response 4: Bird Strikes**.

O-SM-102 The commenter asserts that it is not possible to adequately determine whether the New Hospital would have a significant impact on nearby properties due to direct or indirect earthshaking without use of a microseismic array.

This comment is related to a phenomenon that has been observed with respect to earthquake-induced vibration of a building. Simply stated, if the New Hospital is shaken by an earthquake, the building can induce vibration in the ground in its vicinity. That vibration can spread to the nearby properties. It is possible to detect the specific vibration from the New Hospital in the neighborhood with a microseismic array only if there is no ground shaking at the locations where detection devices are installed.

However, the New Hospital can only be shaken by earthquakes originating from various active faults in the region. Such earthquakes would induce shaking at New Hospital as well as the entire neighborhood and beyond. The vibrations felt in the neighborhood would be predominantly vibrations originating from the earthquake source. In such cases, vibration contribution from the shaking of the New Hospital would be non-detectable in the neighborhood because it would be negligible in comparison to the contribution from the earthquake source. There has been no evidence showing that the negligible contribution from a vibrating building during an earthquake can cause damage to the buildings in the neighborhood. Any damage to a building in the neighborhood can only be attributed to the earthquake-induced vibration in the neighborhood.

In addition, even in the unlikely event that the vibration contribution from the New Hospital to the neighborhood vibration could be detected during an earthquake, it is likely to be of the long period (approximately 4 seconds) variety, which corresponds approximately to the fundamental period of the New Hospital. The buildings in the neighborhood are likely to have much shorter periods than the New Hospital and are therefore unlikely to be impacted by the long period vibration from the New Hospital.[15]

Based on the preceding discussion, it is concluded that the performance of the existing buildings in the neighborhood during an earthquake is likely to be dictated by their response to direct vibrations from earthquake sources rather than by vibrations originating from a shaking New Hospital. It is further concluded that the installation of a microseismic array in the neighborhood in connection with the NHPH project is not warranted for the stated reasons.

15 If the period of the structures in the neighborhood were to match the period of the vibrations originating from the proposed New Hospital, then those neighborhood structures would be shaken substantially by the vibrations from New Hospital in an earthquake because of resonance between the period of the structures and the period of the vibrations. However, there would be no resonance if the period of the neighborhood structures does not match the period of the vibrations from the proposed New Hospital. As such, the neighborhood structures would not be shaken substantially by the vibrations from proposed New Hospital.

From: San Francisco CC
To: Campus Planning - EIR
Cc: gphillips@goldengateaudubon.org; pjgreene@sonic.net
Subject: Draft Environmental Report for the New Hospital at Parnassus Heights from GGAS
Date: Monday, February 14, 2022 5:03:59 PM

February 14, 2022

Ms. Diane Wong
UCSF Campus Planning, Box 0286
San Francisco, CA 94143-0286
EIR@ucsf.edu

Re: Draft Environmental Report for the New Hospital at Parnassus Heights

Dear Ms. Wong,

Thank you for the opportunity to comment on the draft EIR for the NHPH. Golden Gate Audubon Society (GGAS) is a non-profit organization with over 10,000 members and supporters in San Francisco and the East Bay. Our mission is to engage people to experience the wonder of birds and translate that into action to conserve and restore natural ecosystems, focusing on birds, other wildlife, and their habitats for the benefit of the earth's biological diversity that is under severe stress. 1

We recognize the need for expanding the number of hospital beds at Parnassus Heights, and the code requirements for up to date facilities mean that while Moffitt Hospital be seismically retrofitted it cannot be remodeled to meet the modern hospital standards for all kinds of care. 2

The New Hospital will be the tallest building in this part of the city, standing just north of the Mt. Sutro Reserve. One of our major concerns with this structure is the unavoidable bird strikes that will occur. The dEIR contains many encouraging features in this regard.

We applaud the plan to seek LEED Gold or above certification for New Hospital. According to the dEIR, the plan will follow LEED and US Green Building Council's Pilot Credit 55 for bird collision deterrence. The architects outline a plan to choose external materials that are consistent with collision deterrence. The building design presented in the dEIR also incorporates features that reduce large expanses of glass, and the glazing would be targeted to visible light reflectance 10 to 20 percent, wherever possible. The dEIR also states that the project will follow the San Francisco bird-safe ordinance. We do note that San Francisco has the oldest Bird-safe building ordinance in the US. It was state of the art in 2011 when it was passed, but since then many scientific studies have contributed to additional knowledge about the bird building collision issue. Now it is important to go beyond what is actually required in that ordinance. In particular we recommend ground 3 4

level and higher glazed surfaces should be treated with a product with a threat factor of 25 or lower according to American Bird Conservancy laboratory testing. (https://abcbirds.org/glass-collisions/products-database/) 4 cont.

Lighting design includes the use of automated internal shading in patient rooms on the upper floors to reduce the emissions of artificial lighting at night. The dEIR says this about exterior lighting "The New Hospital would comply with the allowed backlight, uplight, and glare (BUG) ratings for exterior lighting, for its specific Model Lighting Ordinance (MLO) lighting zone, or the maximum vertical and horizontal lumen allowances for its lighting zone. Either approach would serve to minimize lighting effects associated with the light sources." Up lighting is not safe for nearby nesting and migrating birds or for insects. We urge the project to use the minimum amount of exterior lighting necessary, minimize any blue light emissions, and provide fully shielded, 90 degree cutoff lighting fixtures. These fixtures direct the lighting to the areas where it is needed for people to see while minimizing sky glow, glare and light trespass. 5

The dEIR proposes that the construction contractor shall follow bird-safe procedures during construction, including following lighting principles described to the extent possible. During nesting season they propose to avoid working in bird habitat, and if they need to work in bird habitat, they propose to hire a biologist to spot potential nests, and establish a safe perimeter. However in the more general sections of dEIR, it is noted that a significant amount of noise and vibration is "unavoidable and cannot be mitigated". The construction timeline begins in January 2023 and continues through 2028 for exterior construction of the NHPH, with the final 2 years spent on interior, and landscaping. During the years of construction on the New Hospital, and the decades of construction on the Comprehensive Parnassus Heights Plan, there will be an extended period of disruption to birds and other wildlife in the vicinity of the Parnassus Campus. 6

The dEIR states that UCSF plans to employ a qualified ornithologist to ensure the most up-to-date measures for bird-safe buildings are followed. Golden Gate Audubon urges UCSF to ensure that the individual hired is well versed in the latest research and has knowledge of the latest mitigations available to ensure that the final design choices are the best possible. Following up to date best practices should result in a building that reduces bird strikes as much as possible. The dEIR states that this makes the threat to birds "less than significant", but state of the art measures cannot eliminate all threats. 7

Reducing the footprint of the hospital so that it no longer extends across Medical Center Way as it did in the CPHP EIR is a big improvement; the placement of medical gas tanks within reserve boundaries seemed like a good tradeoff. However this dEIR notes that 30 feet from the building and from tanks constitutes an 'ember' free zone for fire regulations, and an additional 100 feet is a defensible space with restrictions on vegetation, meaning that a large proportion of this section of the OSP is subject to strict regulation of permitted vegetation. 8

The New Hospital design features an extensive terrace on the sixth level that is proposed to become a public "garden". In addition, landscaping is proposed for balconies associated with articulated terraces and the upper levels. There are also courtyards between the new hospital and existing buildings and spaces at ground level where there are opportunities for 9

new landscaping. The dEIR shows planned placement of trees and shrubs in several of the spaces but still talks vaguely about the use of native plants for this landscaping--noting that native and adaptive plants will be used. 9 cont.

This NHPH project at completion, on balance, seeks to minimize negative effects on birds and wildlife. However the effects of construction are "significant and unavoidable with mitigation", thus for years to come, the project will be disruptive to birds and wildlife. 10

Golden Gate Audubon is mindful of the value of native plants for thriving bird populations and we propose mitigation for the adverse effects of non-zero threat to birds and extended periods of construction; (1) A commitment to the use of native plants in the landscaping of the New Hospital and throughout the CPHP is a small way to mitigate some of these effects going forward. We advise that UCSF consult a native plant expert who is also experienced at the use of local native plants in landscape design for this purpose. 11 (2) A larger mitigation could be achieved in the Mt. Sutro OSP. The Sutro Stewards are planting native understory plants, but only 50 % of replacement trees are designated to be native. Increasing this proportion to 75% would greatly improve the habitat value of the preserve in future decades. 12

Sincerely,

Whitney Grover

Chair, GGAS San Francisco Conservation Committee
Board Member, GGAS

Responses to Comments from Golden Gate Audubon Society

O-GGAS-1 The commenter describes the Golden Gate Audubon Society's purpose and mission. The comment is noted; no response is required.

O-GGAS-2 The commenter recognizes the need for the facility improvements at Parnassus Heights. The comment is noted; no response is required.

O-GGAS-3 The commenter expresses concern for the bird strike potential of the New Hospital, and support for the building design features to follow LEED and reduce light reflectance, and for the proposed bird-safe glass and other measures in NHPH Mitigation Measure BIO-2b. The commenter notes that the San Francisco bird-safe ordinance dates from 2011 and does not reflect the state of the art. Please refer to **Master Response 4: Bird Strikes**.

O-GGAS-4 The commenter recommends treating windows with a product from the American Bird Conservancy that reduces threats by a factor of 25 or more. The University acknowledges receipt of the input on bird protection and has included the recommendations as part of the record of information that will be considered during the decision-making process for this proposed project. Please refer to **Master Response 4: Bird Strikes**.

O-GGAS-5 The commenter recommends that exterior lighting be minimized, lighting be shielded and blue lighting minimized. NHPH Mitigation Measures BIO-2a and 2b promote use of yellow-red spectrum lighting for construction and operational lighting.

O-GGAS-6 The commenter notes that the NHPH Draft EIR describes noise and vibration during construction as unavoidable, and questions whether this noise and vibration would impact birds during nesting season. NHPH Mitigation Measure BIO-1b provides for work exclusion buffers around active nests, and monitoring by a qualified biologist for any occupied nest located within a protective buffer zone in order to determine if the designated buffer zone is effective. If noise and vibration from construction penetrate the buffer and disturb the nesting bird, the measure states that the buffer will be increased until it is effective, up to one-quarter mile.

O-GGAS-7 The commenter recommends hiring an ornithologist experienced with state-of-the-art bird-safe window treatments in order to make the best design choices. Please refer to **Master Response 4: Bird Strikes**.

O-GGAS-8 The commenter acknowledges that the reduced footprint of the New Hospital to not extend across Medical Center Way (as it did when proposed under the CPHP) is a big improvement, with the proposed placement of the medical gas tanks within the Reserve being a good tradeoff. The comment is noted.

The commenter expresses concern about the fire management buffer around the medical gas tanks within the Reserve boundary. The management of vegetation within the 30-foot ember-free zone and the 100-foot defensible space are designed to minimize fire risk. As described in Chapter 3, *Project Description*, within the 30-foot ember-free zone, vegetation management would primarily consist of removal of dead or dying grass, plants, shrubs, trees, branches, weeds, leaves and pine needles. Within the 30- to 100-foot defensible space, vegetation management would include horizontal and vertical spacing among shrubs and trees. It is noted that, as illustrated in Figure 3-21 in Chapter 3, the great majority of the area that would be subject to vegetation management under the NHPH overlaps with an area that is presently subject to vegetation management activities under the Mt. Sutro Open Space Reserve Vegetation Management Plan; thereby minimizing the amount of new vegetation management that would be required under the NHPH. Thus, the buffer area would continue to provide foraging and nesting habitat for birds following construction.

O-GGAS-9 The commenter notes that the NHPH Draft EIR includes landscaping for the sixth level terrace, courtyards and other spaces but is unclear on the use of native plants for landscaping. The commenter suggest that the use of native plants would provide value for bird populations and help to mitigate for the years of disturbance to birds and other wildlife. The commenter suggests that UCSF use native plants in landscaping of the New Hospital and CPHP and within the Reserve. This EIR concerns only the areas that would be affected by the NHPH project. For these areas, UCSF's design team plans to utilize a selection of native and non-native species (Mediterranean climate species adapted to the Bay Area climate).

O-GGAS-10 The commenter notes that construction disturbance in the NHPH Draft EIR is considered significant and unavoidable. However, the NHPH Draft EIR concludes that impacts to nesting and migratory birds are mitigated to a less than significant level with implementation of NHPH Mitigation Measures BIO-1b, 2a and 2c.

O-GGAS-11 and O-GGAS-12 The commenter suggests that the use of native plants would provide value for bird populations and help to mitigate for the years of disturbance to birds and other wildlife during construction of the NHPH. The commenter suggests that UCSF use native plants in landscaping of the New Hospital and CPHP and within the Reserve. This NHPH Draft EIR concerns only the NHPH hospital and surroundings. For these areas, UCSF's design team plans to utilize a selection of native and non-native species.

International Union of Elevator Constructors

AFFILIATED WITH THE
AFL-CIO
PHONE (415) 285-2900
FAX (415) 285-2020

LOCAL UNION NO.8
690 POTRERO AVENUE
SAN FRANCISCO, CA 94110-2117

February 4, 2022

UC Board of Regents
Office of the Secretary and Chief of Staff to the Regents
1111 Franklin St.,12th Floor
Oakland, CA 94607

Dear UC Board of Regents,

On behalf of the membership of the International Union of Elevator Constructors Local 8, I am writing to express our full support for the proposed new hospital at UCSF Helen Diller Medical Center at Parnassus Heights. 1

The historic Community Workforce Agreement (CWA) between UCSF and San Francisco Building & Construction Trades Council (SFBCTC) will create an estimated 1,000 new unionized, good paying jobs for the construction of the new hospital alone. The CWA ensures the new hospital build will employ a union workforce with strong representation of local labor from 32 trade unions that represent 30,000 local skilled workers. Our agreement with UCSF will also ensure that apprentices in the trades and military veterans will be given ample opportunity to work on this $3 billion construction project. Our state-of-the-art apprenticeship programs are jointly administered with our industry partners, certified by the State, with two-thirds of all California apprentices identify as people of color.

Additionally, the Memorandum of Understanding (MOU) between UCSF and the City and County of San Francisco commits UCSF to expanding its EXCEL workforce training program by 50% and its partnership with the CityBuild pre-apprenticeship training program by a combined $5 million and sets a 30% local hire target for all construction workers. You may already know that CityBuild is the premier and only SF based Multi-Craft Core Curriculum (MC3) certified program by North America's Building Trades Unions, which boasts 78% percent people of color with 17% female participation. 2

As our city and region continue to recover from the economic impacts of the COVID-19 pandemic, this project will serve as a much-needed shot in the arm for San Francisco's economy and workforce. Furthermore, UCSF's pledge to honor San Francisco's long history of organized labor and collective bargaining will guarantee that working class families will continue to benefit from this investment in our local economy throughout the term of the project.

Local 8 strongly urges the UC Board of Regents to approve this project to help our city and its workers recover and thrive. Please support UCSF's new hospital at UCSF Helen Diller Medical Center at Parnassus Heights and help strengthen the health of our community and local economy. 3

Sincerely,

Greg Hardeman
Business Representative/ Recording Secretary

GMH/mrs

Cc: San Francisco Building & Construction Trades Council

Responses to Comments from the International Union of Elevator Constructors

O-IUEC-1 The commenter expresses general opinions regarding the merits of the proposed NHPH. This comment does not address the adequacy of the NHPH Draft EIR; consequently, as explained in **Master Response 1: Non-CEQA Comments**, no response is required. However, the comment has been noted and will be forwarded to the decision-makers.

O-IUEC -2 The commenter provides background information on the IUEC and expresses opinions regarding the merits of the proposed NHPH. This comment does not address the adequacy of the NHPH Draft EIR; consequently, no response is required. However, the comment has been noted and will be forwarded to the decision-makers.

O-IUEC -3 The commenter expresses opinions regarding the merits of the proposed NHPH. This comment does not address the adequacy of the NHPH Draft EIR; consequently, no response is required. However, the comment has been noted and will be forwarded to the decision-makers.

8.4.2.3 Draft EIR Comment Letters – Individuals

From:	Lisa Heschong
To:	Campus Planning - EIR
Subject:	UCSF Parnassus Hospital v UCSB Munger Hall
Date:	Friday, January 7, 2022 1:33:32 PM

Dear UCSF and UCOP folks:

How is it that there is a such a thoughtful, community responsive, science driven design process for the proposed UCSF Parnassus Hospital, and the exact opposite for the proposed Munger Hall Dorm at UCSB?

Surely, the UC Board of Regents cannot follow a careful process for review of UCSF's proposed project, and then completely ignore all the same inputs for the UCSB Dorm. The proposed UCSB dorm has raised concerns not just locally, but across the world. It has been labeled "The Most Hated Building in the World" by French internet commentors. The entire California AIA community has condemned the UCSB design, along with experts from many other fields weighing in about how fundamentally unhealthy the design will be. 1

I do hope that the UC system can continue to demonstrate leadership in designing and building the very best buildings in the world—healthy, safe, efficient, beautiful and community friendly--and as a result, the Munger Hall proposal will be thoroughly rejected by the Regents.

Best,
Lisa Heschong, FIES
Santa Cruz, CA
www.lheschong.com
Cell (916) 396 6357

Responses to Comments from Lisa Heschong

I-Heschong-1 The commenter expresses opinions regarding the merits of the design process for the NHPH compared to that for an unrelated dormitory project at another UC campus. This comment does not address the adequacy of the NHPH Draft EIR; consequently, as explained in **Master Response 1: Non-CEQA Comments**, no response is required. However, the comment has been noted and will be forwarded to decision-makers.

From: marty cerles
To: Campus Planning - EIR
Subject: Comment on Draft EIR
Date: Thursday, January 13, 2022 2:09:47 PM

This Message Is From an External Sender
This message came from outside your organization.

Hello,

My name is Marty Cerles, and I live on Parnassus at Shrader. I am very supportive of the draft EIR and this project in general, and urge you to construct as much housing as possible. 1

Thanks,

Responses to Comments from Marty Cerles

I-Cerles-1 The commenter expresses general opinions regarding the EIR and the merits of the proposed NHPH. This comment does not address the adequacy of the NHPH Draft EIR; consequently, as explained in **Master Response 1: Non-CEQA Comments**, no response is required. However, the comment has been noted and will be forwarded to decision-makers.

From:	Nick Meyer
To:	Campus Planning - EIR
Subject:	Public Comment on Parnassus Expansion
Date:	Thursday, January 13, 2022 9:18:36 PM

Dear Ms. Diane Wong,

I strongly support the expansion of UCSF's Parnassus campus.

It's a gift to have a world-class research hospital in our neighborhood. It's even better that it's part of a well-run organization that's been extremely thoughtful with it's planning, community engagement, expansion designs and environmental planning. Thank you for a comprehensive EIR.

My only constructive comment is that it's unfortunate it is taking so long to start the project. Let's get this hospital built!

1

Sincerely,
Nick Meyer
1483 Oak St, San Francisco, CA 94117

--
Nick Meyer
c. +1 808 283 5763

Responses to Comments from Nick Meyer

I-Meyer-1 The commenter expresses opinions regarding the merits of the proposed NHPH. This comment does not address the adequacy of the NHPH Draft EIR; consequently, as explained in **Master Response 1: Non-CEQA Comments**, no response is required. However, the comment has been noted and will be forwarded to decision-makers.

Marsha Bird
700 Parnassus Ave.
#23
SF, CA 94122

January 14, 2022

Dear Ms. Wong,

I live across from the dental school. I have been in this building for 11 ½ years. I have been following the process on the NHPH. I read some of the EIR from a few years ago. 1

While it's nice that UC wants to provide more hospital beds the environmental impact to the neighborhood would be significant.

I am retired and can't afford to move. The noise and added heavy traffic would significantly impact my quality of life. 2

I hope the Board of Regents will consider building the new hospital in Mission Bay where they have already put a large project. 3

Sincerely,
Marsha Bird

Responses to Comments from Marsha Bird

I-Bird-1 The commenter provides some background comments that are not related to the adequacy of the NHPH Draft EIR; consequently, no response is required.

I-Bird-2 The commenter makes a general statement that the environmental impact to the neighborhood would be significant. The commenter adds that the noise and added heavy traffic would significantly affect the quality of life.

With respect to noise and transportation impacts, those topics are fully analyzed and mitigated to the extent feasible in Section 4.11, Noise and Vibration and Section 4.13, Transportation in the NHPH Draft EIR. Please note, however, that as discussed in **Master Response 1: Non-CEQA Comments**, potential effects of a proposed project on the "quality of life" and related conditions, in and of themselves, are not considered environmental impacts under CEQA.

I-Bird-3 The commenter indicates support for placing the New Hospital in Mission Bay. Please see NHPH Draft EIR Section 6.4.1 which explains that while the University did consider locating the proposed New Hospital at the Mission Bay campus site, it determined that such an alternative would not meet most of the key objectives of the proposed project, and while it would reduce impacts at the Parnassus Heights campus site, it would result in similar impacts at the Mission Bay site as well as the additional traffic and air quality impacts from travel between the two campus sites. Based on this, the University did not carry the alternative forth for detailed evaluation in the Draft EIR.

From: Sharon
To: Campus Planning - EIR
Subject: New Hospital
Date: Wednesday, January 19, 2022 3:18:32 PM

Diane Wong,

Hi Diane, my husband & I are both 100% behind & in favor of the new hospital being built as planned. We are both very excited about it. It will be a fantastic addition to our health care community. 1

Thank you so much,

Sharon & Columbus Jenkins
55 Merced Avenue
San Francisco, Ca 94127

Responses to Comments from Sharon Jenkins

I-Jenkins-1 The commenter expresses opinions regarding the merits of the proposed NHPH. This comment does not address the adequacy of the NHPH Draft EIR; consequently, as explained in **Master Response 1: Non-CEQA Comments**, no response is required. However, the comment has been noted and will be forwarded to decision-makers.

From: Denise Louie
To: Wong, Diane C.
Subject: Re: UCSF Draft EIR on the New Hospital at Parnassus Heights
Date: Saturday, January 22, 2022 10:53:35 PM

Hi Diane,
Regarding UCSF's Parnassus Heights Plan EIR, I am sorely disappointed that my concern over water does not appear in Volume 2. I had raised this issue more than once during online meetings.

The EIR does not adequately address my concern that we must all conserve water wherever we can. Water must be treated as a precious resource for all life, including species other than our own. It is 20th century thinking that we will always have plenty of freshwater to use. However, fish in the San Francisco Bay and Delta and in headwaters are in peril, at the brink of extinction. Entire ecosystems are on the verge of collapse. Natural ecosystem functions are disappearing. All of this is related to the negative environmental impacts of human activities. And yet, humans depend on healthy ecosystems.

Section 4.16, Impact UTIL-2 states "Sufficient water supply would be available from existing entitlements and resources to serve development under the proposed CPHP under normal, dry and multi-dry years if the Bay Delta Plan Amendment is implemented. If the Bay Delta Plan Amendment is implemented, the SFPUC may address the shortfalls thro would ugh rationing and/or develop new or expanded water supply facilities to address shortfalls in single and multiple dry years. The CPHP would not make a considerable contribution to impacts from increased rationing or from the development of new supply sources." This impact is described as "Less Than Significant" with no remediation required. 1

In new construction, pipes should carry rainwater and greywater for landscaping and flushing toilets, for example. Tanks and treatment facilities should be part of the architectural design and the construction. Because we can do better and leave more cool, fresh flowing water for fish.

I strongly urge UCSF to require that my concern over water use, conservation and remediation be detailed in the EIR. Because our use of water has had perilous effects on Delta Smelt, Salmon and entire ecosystems. The Environmental Impact Report's failure to address water use impacts on the environment is a serious deficiency.

Sincerely,
Denise Louie

Responses to Comments from Denise Louie

I-Louie-1 The commenter asserts that the NHPH Draft EIR did not adequately address water conservation. The commenter further asserts that fish in the Bay, Delta and in headwaters are in peril, and that natural ecosystem functions are on the verge of collapse.

The NHPH Draft EIR discusses the adoption of the amendments to the Bay Delta Plan Amendment by the State Water Resources Control Board in 2018. As stated on page 4.14-8 of the NHPH Draft EIR, among the goals of the adopted Bay-Delta Plan Amendment is to increase salmonid populations in three San Joaquin River tributaries and the Bay-Delta. Specifically, the plan amendment requires increasing flows in the Stanislaus, Tuolumne, and Merced Rivers of 30 to 50 percent of unimpaired flow from February through June every year, whether it is wet or dry.

The NHPH Draft EIR also discusses the 2020 Urban Water Management Plan (2020 UWMP) adopted by San Francisco Public Utilities Commission (SFPUC) for the City and County of San Francisco. As indicated on page 4.14-9 of the NHPH Draft EIR, the 2020 UWMP includes information on the SFPUC system supplies and demands, water supply reliability, Water Conservation Act of 2009 compliance, water shortage contingency planning, and water demand management. The 2020 UWMP considers future water supply scenarios both with and without the implementation of the Bay Delta Plan Amendment.

The NHPH Draft EIR also describes the UC Sustainable Practices Policy, updated in 2019. As discussed on pages 4.14-8 to 4.14-9, the UC Sustainable Practices Policy establishes goals for sustainable practices, including for sustainable water systems, and sustainability at UC Health locations. The NHPH Draft EIR notes that UCSF saves millions of gallons of potable water annually through implementation of a comprehensive Water Action Plan, which outlines the campus's methods for reducing dependence on potable water and identifies broader opportunities for water conservation. Over the past 10 years, potable water use at the Parnassus Heights campus site has decreased approximately 40 percent, from a maximum of 0.56 million gallons per day in FY 2010/11 to 0.33 million gallons per day in FY 2018/2019 as a result of the UCSF Water Action Plan. Development on the Parnassus Heights campus site must comply with the goals set forth in the Water Action Plan. The UC Sustainable Practices Policy identifies the goal of a 20 percent reduction in growth-adjusted potable water consumption by 2020, and by 36 percent by 2025 (compared to a 3-year average water consumption baseline of FY 2005–06, FY 2006–07, and FY 2007–08).

The commenter references Impact UTIL-2 in the NHPH Draft EIR. Impact UTIL-2 incorporates the findings of the water supply evaluation prepared for the NHPH in support of the NHPH EIR. Impact UTIL-2 correctly concludes that sufficient water supplies would be available from SFPUC to serve the NHPH and reasonably

foreseeable future development under normal, dry and multi-dry years even if the Bay Delta Plan is amended. If the Bay Delta Plan is implemented, the SFPUC would address the anticipated shortfalls through rationing and/or develop new or expanded water supply facilities to address shortfalls in single and multiple dry years. Further, the Impact UTIL-2 finds that the NHPH would not make a considerable contribution to environmental impacts from increased rationing or from the development of new supply sources. Accordingly, the impact was determined to be less than significant, and no mitigation was required.

The commenter also indicates that in new construction, pipes should carry rainwater and graywater for landscaping and flushing toilets, and that tanks and treatment facilities should be part of the architectural design and construction. The commenter is referred to the NHPH Draft EIR Chapter 3, Project Description, which includes a description of proposed utility improvements to serve the NHPH. This includes, but not limited to, development of a 150,000-gallon capacity stormwater storage facilities on the campus, which can be potentially be re-used for irrigation purposes on the campus. Furthermore, the NHPH would be subject to all applicable water conservation codes and requirements, such as low-flow water fixtures, showers and toilets. However, it should be noted it is not feasible for hospitals such the proposed NHPH to be piped for use of rainwater/graywater for facilities such as toilets.

The proposed NHPH project would incorporate the latest available water conservation technologies, including the use of the highest efficiency flow and flush fixtures, kitchen equipment, medical equipment, sterilizers and laundry equipment. An estimated 44 percent reduction in water use would be achieved compared to standard equipment.

The proposed NHPH project would also include native and adaptive plant types and high-efficiency irrigations systems to achieve an estimated 44 percent reduction in water use, in comparison to standard landscaping and systems without such efficiencies.

Comment Letter I-Pierotti

From: Karen Pierotti
To: Campus Planning - EIR
Subject: UCSF new hospital on Parnassus
Date: Thursday, February 3, 2022 5:05:19 PM

We have been a homeowners at 1279 3rd Avenue since 1999. We are against this huge building in our neighborhood. It is way out of proportion to our neighborhood. When we purchase our home we were promised that UCSF made a promise to all nearby neighbors that they would not build out the campus more than they already had done. Go build your enormous hospital in Mission Bay with the rest of your development. Your building will cause huge traffic, parking & noise problems to our neighborhood. The shadow of the hospital will ruin our homes. It's a ridiculous size for the community. The disruption of soil & water will have very bad consequences for us neighbors downhill. You are placing a big burden on us. If we wanted to live near a skyscraper, then we would move downtown. 1 2 3

The Board of Regents should be ashamed of itself. They have betrayed the trust of the Inner Sunset community .

Karen & Richard Pierotti
1279 3rd Ave
SF CA 94122

Sent from my iPhone

Responses to Comments from Karen Pierotti

I-Pierotti-1 The commenter expresses opposition to the proposed New Hospital, indicating it is too large and out of proportion to the neighborhood. The commenter adds that when they purchased their home, that they were promised that UCSF would not build out the campus more than they already had. The commenter is referred to Section 4.1, *Aesthetics, Wind and Shadow*, which evaluates the potential aesthetic effects of the New Hospital on scenic vistas (Impact AES-1), and with potential conflicts of the New Hospital with applicable zoning and other regulations governing scenic quality (Impact AES-2); and determines these impacts to be less than significant.

In addition, as discussed in Section 4.10, *Land Use and Planning*, Impact LU-1, while the proposed NHPH would result in an increase in square footage and population at the Parnassus Heights campus site, the 2014 LRDP as amended in January 2021 revised the space program, updated the projected population, and revised the Regents' Resolution to increase the space ceiling at the campus site. As such, the NHPH would be within the size and population parameters of the 2014 LRDP, as amended.

I-Pierotti-2 The commenter indicates the New Hospital should be built in Mission Bay. The commenter indicates support for placing the New Hospital in Mission Bay. Please see NHPH Draft EIR Section 6.4.1 which explains that while the University did consider locating the proposed New Hospital at the Mission Bay campus site, it determined that such an alternative would not meet some of the key objectives of the proposed project, and while it would reduce impacts at the Parnassus Heights campus site, it would result in similar impacts at the Mission Bay site as well as the additional traffic and air quality impacts from travel between the two campus sites. Based on this, the University did not carry the alternative forth for detailed evaluation.

I-Pierotti-3 The commenter expresses opinions that do not address the adequacy of the NHPH Draft EIR; consequently, as explained in **Master Response 1: Non-CEQA Comments**, no response is required. However, this comment has been noted and will be forwarded to decision-makers.

From: Mary Cerutti
To: Campus Planning - EIR
Subject: New hospital
Date: Friday, February 4, 2022 10:42:58 PM

To Diane Wong

I 100% support building UCSF's new hospital as proposed. UCSF is a precious asset to this community and has served all of us well over many decades, notably in the past two years.. I believe the services UCSF provides outweigh any serious environmental or aesthetic concerns.I love having UCSF in our neighborhood, and I hope very strongly that NIMBYism does NOT prevail.

1
2
3

Best,
Mary Cerutti
240 Hugo St.
SF 94122

Responses to Comments from Mary Cerutti

I-Cerutti-1 The commenter expresses support for the proposed New Hospital. This comment does not address the adequacy of the NHPH Draft EIR; consequently, no response is required. However, this comment has been noted and will be forwarded to decision-makers.

I-Cerutti-2 The commenter indicates the services UCSF provides outweigh any serious environmental or aesthetic concerns. This comment has been noted and will be forwarded to decision-makers. Please note that the NHPH Draft EIR addresses all potential environmental impacts of the proposed NHPH and mitigates significant impacts to the extent feasible.

I-Cerutti-3 The commenter expresses support for UCSF. This comment does not address the adequacy of the NHPH Draft EIR; consequently, no response is required. However, this comment has been noted and will be forwarded to decision-makers.

Molley and Richard Lowry
54 Woodland Ave.
San Francisco, CA 94117

To: Diane Wong
UCSF Campus Planning
Box 0287
San Francisco, CA 94143

February 5, 2022

Re: Draft EIR for New Hospital at Parnassus Heights

We have lived and raised a family on Woodland Avenue since 1972. Neighbors in this area have dealt with UCSF's expansion plans for many years. The current plans to greatly increase the square footage and population at Parnassus violates past agreements of a space ceiling and does damage to a neighborhood and environment that cannot be covered in even a many-thousand page EIR. 1 2

The area that surrounds the Parnassus Heights UCSF campus is a compact residential neighborhood. UCSF is the largest landowner, employer and institution here. Its impacts are felt everywhere for good and for bad. Many of our neighbors work for UCSF, most people here value the important work, research and health care that occurs there. We are also very aware of the impacts of visitors, patients and employees on parking, traffic, congestion and pressure on housing. Needed upgrades to the Parnassus campus were approved by neighborhood representatives in UCSF's 2014 Long Range Development Plan. But the new plan to add over one million square feet of building and many thousands of people to an already crowded campus sounds like a planning nightmare. For those of us who live nearby it seems more like a living nightmare: More than 10 years of construction noise and traffic congestion on Parnassus and Judah. And in the end, the same two-lane Parnassus Avenue, thousands more people in the area every day and an enormous hospital looming above and encroaching on Sutro Forest. 3 4 5 6

What happened to plans for UCSF to expand further at Mission Bay? That area is certainly a more realistic location for a new hospital and other needed spaces. It is not congested. It is also an area that the city would like to see utilized, enlivened and a community emphasizing health care created. The current EIR mentions consideration of other locations for the planned expansion but basically dismisses the possibility with vague claims of undesirability. 7

In Alternative 2 of the draft EIR a Reduced Project is described that suggests a renovation of Moffitt Hospital, reduction in height of about 82 feet, smaller footprint and lessening of all the problems to be "mitigated" such as wind tunnel effect and historic preservation. If UCSF insists on the expansion they should at least consider their own EIR-suggested alternatives. 8

Molley and Richard Lowry

Responses to Comments from Molley and Richard Lowry

I-Lowry-1 The commenter provides some background comments that are not related to the adequacy of the NHPH Draft EIR; consequently, no response is required.

I-Lowry-2 The commenter asserts the current plans to increase the square footage and population at Parnassus violates past agreements of a space ceiling and would do damage to the neighborhood and environment.

While the proposed NHPH would result in an increase in square footage and population at the Parnassus Heights campus site, the 2014 LRDP as amended in January 2021 revised the space program, updated the projected population, and revised the Regents' Resolution to increase the space ceiling at the campus site. As such, the NHPH would be within the size and population parameters of the 2014 LRDP, as amended.

I-Lowry-3 The comments indicates that UCSF's impacts are felt everywhere, including from visitors, patients and employees on parking, traffic, congestion and pressure on housing.

As discussed in **Master Response 2: General Comments on EIR and Environmental Topics**, due to lack of specificity in the comment, no direct response is possible. However, please also see NHPH Draft EIR Sections 4.12, *Population and Housing*, which addresses how the NHPH may induce population growth and create a demand for new housing.

I-Lowry-4 The comment opines that the plan to add over one million square feet of building and several thousand people to an already overcrowded campus would be a planning nightmare; and for those live nearby the campus site it would seem like a living nightmare. This comment does not address the adequacy of the NHPH Draft EIR; consequently, as explained in **Master Response 1: Non-CEQA Comments,** no response is required. However, the comment has been noted and will be forwarded to decision-makers.

I-Lowry-5 The commenter references more than 10-years of construction noise and traffic congestion on Parnassus Avenue and Judah Street. As discussed in **Master Response 2: General Comments on EIR and Environmental Topics**, due to lack of specificity in the comment, no direct response is possible. However, the NHPH Draft EIR Section 4.11, Noise and Vibration and Section 4.13, Transportation address all construction noise and transportation impacts, and identify mitigation measures to mitigate all significant impacts to the extent feasible.

I-Lowry-6 The commenter indicates the New Hospital would loom above and encroach on Sutro Forest. In fact, in contrast to the prior New Hospital concept previously

proposed under the CPHP, the New Hospital design proposed under the NHPH, no portion of the New Hospital would encroach within the Reserve.

I-Lowry-7 The commenter states that Mission Bay is a more realistic location for the New Hospital. Please see NHPH Draft EIR Section 6.4.1 which explains that while the University did consider locating the proposed New Hospital at the Mission Bay campus site, it determined that such an alternative would not meet most of the basic objectives of the proposed project, and while it would reduce impacts at the Parnassus Heights campus site, it would result in similar impacts at the Mission Bay site as well as the additional traffic and air quality impacts from travel between the two campus sites. Based on this, the University did not carry the alternative forth for detailed evaluation in the NHPH Draft EIR.

I-Lowry-8 The commenter suggests that as Alternative 2 would reduce many impacts of the proposed New Hospital, the University should consider approving this alternative. Alternative 2 was analyzed in detail in the NHPH Draft EIR and upon completion of the analysis, was determined to be the environmentally superior alternative. All of the alternatives, including Alternative 2, and their relative merits and demerits will be considered by the Regents when making a final decision as to approve the project as proposed or an alternative to the project.

From: John Gilmore
To: Haight Ashbury Neighborhood Council; gnu@toad.com; Campus Planning - EIR; dean.preston@sfgov.org; myrna.melgar@sfgov.org; mayorlondonbreed@sfgov.org
Subject: Re: Comment on UCSF Draft EIR by February 14 - and related action
Date: Sunday, February 6, 2022 11:22:57 PM

I fully support the construction of a large seismically-safe hospital in the Parnassus Heights campus. 1

It's sad that the Haight-Ashbury Neighborhood Council (HANC) has returned to its NIMBY roots, even after getting caught opposing low-income housing on Stanyan St. I recommend significantly discounting all NIMBY input such as HANC's. Their UCSF Flyer amounts to: 2

"A new hospital is required by law, but [don't build it in our backyard]!"

The reason that UCSF has to build a new hospital is so it will survive a 9.0 earthquake. "State law requires hospital facilities to comply with seismic safety building standards as defined by the Office of Statewide Health Planning and Development. In order to comply with these standards, Moffitt Hospital must be structurally retrofitted or decommissioned as an inpatient facility by 2030." The theory of HANC seems to be that after such a quake, the nearest functioning hospital should be as far from the Haight as possible. (I think Parnassus Heights is already pretty far away from the Haight anyway, so why does HANC care?) Most important, a distant hospital would poorly serve the Haight-Ashbury population that HANC claims to represent. 3

Or perhaps HANC thinks that a small hospital is better than a large one. This reasoning is suspect. During COVID, would a small hospital have been better than the large dual hospital we have today? Just so that if we had run out of patient rooms and people were dying for lack of care, HANC could be happy about how the hospital looks on the skyline, or how much or little transit runs past it? The function of a hospital is to serve the whole population with medical issues -- not to satisfy armchair critics. 4

Perhaps a clue to HANC's objection is their phrase "UCSF's desire to serve more well-paying patients". Why should UCSF not serve well-paying patients? Should they not serve well-paying medical students either? Perhaps they should not serve well-paying government research agencies too? Perhaps UCSF should poorly serve the taxpayers who pay top union prices for the hospital construction, too? Why not have UCSF serve NOBODY well -- would that satisfy HANC's objection? 5

Is HANC's theory that people should NOT be served if they pay well? So the only people who should get good service are people who pay poorly or not at all? If so, the objection makes no sense. They don't object to restaurants in the Haight that are so good that they can charge high prices. They don't object to computers and phones so good that they cost high prices, like Apple's. Their objection to hospitals that will serve more people who can actually pay for service is inconsistent and nonsensical.

Perhaps HANC thinks that the Haight should only have a shitty hospital

that nobody with any money would want to go to? Leaving both the rich and the poor to die when they have medical issues after 2030, would not serve anything but HANC's own political ambitions.

5 cont.

UCSF should build its "new giant hospital on Parnassus Avenue". Thank you for asking the neighbors their opinion. I am one of them.

6

John Gilmore
Haight-Ashbury resident since 1978
PO Box 170640
San Francisco, California, USA 94117
gnu@ucsf-eir.toad.com

Responses to Comments from John Gilmore

I-Gilmore-1 The commenter expresses support for the NHPH. This comment does not address the adequacy of the NHPH Draft EIR; consequently, as explained in **Master Response 1: Non-CEQA Comments**, no response is required. However, the comment has been noted and will be forwarded to decision-makers.

I-Gilmore-2 The commenter presents opinions that do not address the adequacy of the NHPH Draft EIR; consequently, as explained in **Master Response 1**, no response is required. However, the comment has been noted and will be forwarded to decision-makers.

I-Gilmore-3 The commenter accurately summarizes the need for Moffitt Hospital to be structurally retrofitted to comply with applicable seismic safety building standards. No response is required.

I-Gilmore-4 The commenter presents opinions that do not address the adequacy of the NHPH Draft EIR; consequently, no response is required. However, the comment has been noted and will be forwarded to decision-makers.

I-Gilmore-5 The commenter presents opinions that do not address the adequacy of the NHPH Draft EIR; consequently, no response is required. However, the comment has been noted and will be forwarded to decision-makers.

I-Gilmore-6 The commenter expresses support for the NHPH. This comment does not address the adequacy of the NHPH Draft EIR; consequently, no response is required. However, the comment has been noted and will be forwarded to decision-makers.

February 7, 2022 dEIR comments Pinky Kushner, San Francisco

I thank you for the opportunity of commenting on the dEIR of the proposed new UCSF hospital at Parnassus Heights.

1. LIGHTS— How will skyglow be measured?

The Parnassus location in San Francisco very frequently has nights with low clouds. These clouds cause a broad spreading of lights from their source. The light spreads laterally as well as upward and downward. It bounces from the cloud cover back to the below—ground, street, earth generally, back up to the cloud cover and down again and again.

Termed skyglow by the International Dark Sky Organization, this spread of light is most annoying in the residential communities. It can, however, be measured. **How will UCSF measure night light? The measurements should include spread or *skyglow* and quality of light in terms of color temperature (Kelvins).** There are monitors available. **What monitors will UCSF use? Will UCSF commit to modifying their lights if the skyglow is more than the current level?** 1

The upper floors of this very, very tall, glass building may even occasionally be 'above the could,' making the entire cloud cover glow far and wide. The lower floors, however, will also contribute significantly to skyglow. The building is of course a hospital with interior lights 24 hours a day.

Skyglow is more than annoying—-it is unhealthy. "….[A]rtificial light at night can negatively affect human health, increasing risks for obesity, depression, sleep disorders, diabetes, breast cancer and more." (IDSO).

An additional problem is that the new hospital backs into a nature preserve, where night should be night. 2

"For billions of years, all life has relied on Earth's predictable rhythm of day and night. It's encoded in the DNA of all plants and animals. Humans have radically disrupted this cycle by lighting up the night. Plants and animals depend on Earth's daily cycle of light and dark rhythm to govern life-sustaining behaviors such as reproduction, nourishment, sleep and protection from predators. Scientific evidence suggests that artificial light at night has negative and deadly effects on many creatures including amphibians, birds, mammals, insects and plants." (IDSO)

I live on 6th Avenue between Judah and Irving. We have two east-facing upstairs bedrooms. I would be happy to help UCSF do light measurements from my windows, baseline and once new lights are in place. 3

In sum, the EIR must consider light dispersal seriously and technically. The EIR only mouths the commonplace statement that it will do 'as much as is feasible.' What does 'feasible' mean? Standardized measurements must be made and shared with the public.

2. SIZE of patient rooms

This may or may not be part of a typical EIR, but it should be part of a hospital EIR. 4

I understand the patient rooms are around 400 sq ft in area. I find this a bit surreal since a one bedroom apartment is about that size. If this is accurate, that size makes a very heavy burden on the hospital staff having to navigate from one patient to another. Staff—nurses, aides, and other medical personnel—must attend more than one patient. The larger the rooms, the more

spread out the rooms are, requiring staff to walk miles a day to perform their duties, leading to staff fatigue and ADA and OSHA issues. An environmental review of a hospital facility should incorporate design principles that do not stretch personnel resources, that do not cause ADA and OSHA complications. Four hundred square feet has to be explained as to how staff can manage the distances this design will require.

4 cont.

3. LOCATION of the new hospital—the elephant in the room.

The location of this new, large Parnassus hospital is not appropriate. This location is cramped and should be considered full. At the present, sidewalks are crowded, transportation is a nightmare, significantly so. The dEIR ignores these impacts, claims unrealistic mitigations, or states that the impacts are 'unavoidable.' This is nonsense. As an example, the number of new hospital beds demands a significant increase in supply deliveries. The EIR says the deliveries 'will occur in the evening or night hours.' This is no mitigation. The impact to the community will still be there. The only way to avoid these impacts is to move the new hospital to an appropriate location.

5

Pinky Kushner

1362 6th Avenue
San Francisco, CA. 94122

510 459-8289 mobile

Responses to Comments from Pinky Kushner

I-Kushner-1 The commenter references skyglow as termed by the International Dark Sky Organization, and inquires how UCSF will measure night light.

It is assumed the commenter is referring to the International Dark-Sky Association, not the International Dark Sky Organization. The NHPH Draft EIR Chapter 3, Project Description subsection on New Hospital Lighting states the New Hospital would comply with the allowed backlight, uplight, and glare (BUG) ratings for exterior lighting, for its specific Model Lighting Ordinance (MLO) lighting zone, or the maximum vertical and horizontal lumen[1] allowances for its lighting zone. The NHPH Draft EIR additionally describes that the International Dark-Sky Association and the Illuminating Engineering Society (IES) developed a Model Lighting Ordinance (MLO) to address the need for a consistent outdoor lighting regulation in North America. The MLO uses a classification of five lighting zones for different land uses, ranging from LZ0 (for pristine natural environments) to LZ4 (for limited application in areas of extensive development in cities). The MLO also limits the amount of light used for properties. In addition, the MLO uses the IES's backlight, uplight, and glare (BUG) classification of outdoor lighting fixtures to ensure that well-shielded fixtures are used, and that no uplighting is used.

The proposed approach described above would be effective in minimizing light effects associated the NHPH nightlight sources. In addition, the NHPH Draft EIR also identifies additional nightlight and glare measures in NHPH Mitigation Measure AES-3 and NHPH Mitigation Measures BIO-2a-b to further ensure potential light and glare impacts would be less than significant.

I-Kushner-2 The commenter asserts that scientific evidence suggests that artificial light has negative and deadly effects on creatures, including amphibians, birds, mammals, insects and plants.

Impacts of artificial light on migrating birds during both NHPH construction and operation are addressed in Section 4.3 in Impact BIO-2, and identified as potentially significant. These effects are mitigated to a less than significant level with implementation of NHPH Mitigation Measure BIO-2a, which requires minimizing and fully shielding construction lighting, and NHPH Mitigation Measure BIO-2b, which requires avoiding unnecessary night lighting, motion sensors, and shielding for operational lighting. The minimization and shielding of external lighting would similarly protect other wildlife, including amphibians, mammals, and invertebrates; and vegetation in the vicinity of the NHPH

I-Kushner-3 The commenter indicates the EIR must consider light dispersal seriously and technically; and that standardized measurements must be made and shared with

[1] The lumen is a measure of the total quantity of visible light emitted by a source per unit of time.

the public. As described in response to Comment I-Kushner-1, above, UCSF proposes a framework as part of the project consistent with professional standards to ensure that lighting from the New Hospital would be within allowances defined for the lighting zone established for the land use. This, combined with the mitigation measures identified in the NHPH Draft EIR, will ensure nightlight effects associated with the NHPH project, will be less than significant.

The commenter also inquires what does "feasible" mean. Per Section 15364 of the CEQA Guidelines, "feasible" means capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors.

I-Kushner-4 The commenter questions the need for the proposed size of the patient rooms in the New Hospital being 400 square feet. Current hospital codes require that patient rooms meet specific clear area and dimensional requirements, which necessitate the new rooms be at least 250 square feet for Acute Care, and 300 square feet for Intensive Care. UCSF would create a flexible building that can accommodate both Acute Care and Intensive Care in the same patient room footprint, positioning UCSF to serve the clinical needs of the next 50 to 100 years. The size of the patient rooms in the proposed New Hospital would allow them to be acuity adaptable and service the clinical needs of patients at various levels of care. The standard sizing of all patient rooms enables UCSF to quickly convert an acute care floor to a critical care floor. As the need for critical care increases, due to unforeseen issues such as pandemics or as a trend in intensity of health care, UCSF must be ready to meet this need to provide care to the most critically ill. This degree of resiliency is best practice for Academic Medical Centers and has been implemented by many of UCSF's peer institutions.

The commenter also asserts that the larger the rooms, the more spread out the rooms are, requiring staff to walk miles a day to perform their duties, leading to staff fatigue and ADA and OSHA issues. NHPH patient rooms have been designed to optimize treatment space for staff and equipment as well as space for family members who may be engaged in support patient care. The room configuration allows for nurse servers and line of sight for caregivers and support efficient care delivery. In addition, patient room groupings of 12 or 18 rooms further support staff mitigating travel beyond the cluster area. Please note that development of the patient room plans is still in progress, and while it is anticipated that some rooms for bariatric patients and other specialty needs may be larger than standard, UCSF is working to keep all patient rooms within a range of 290 to 320 square feet.

I-Kushner-5 The commenter indicates the location for the proposed New Hospital is not appropriate, citing that the location is cramped, sidewalks are crowded, and that transportation is adverse.

The New Hospital was designed in consideration of its location along Parnassus Avenue, proximity to the Reserve and surrounding neighborhood. It should be noted the overall size of the proposed New Hospital has been reduced by 55,000 gross square feet from its original proposal under the CPHP.

As described in the NHPH Draft EIR Project Description, the proposed NHPH project proposes a variety of circulation improvements to improve vehicle and pedestrian access in the New Hospital vicinity.

- The sidewalks along Parnassus Avenue adjacent to the New Hospital and the renovated Moffitt and Long Hospitals would be improved to provide a minimum width of eight feet, thus providing sufficient space for pedestrian travel, and unobstructed passage for people, strollers and wheelchairs; and include streetscape improvements such as new street trees.
- The proposed tunnel and pedestrian bridge would serve to better facilitate public access across Parnassus Avenue and reduce congestion along the roadway.
- The New Hospital would include a vehicular turnaround located beneath the New Hospital building podium on the street level to provide a drop-off for patients and visitors.
- A new traffic signal would be installed at the intersection of Parnassus Avenue and Hillway Avenue to improve vehicular operations at this location.
- Medical Center Way would be improved, as it would be standardized to 26 feet in width (curb to curb), and thereby meet City Fire Department fire truck access standards, and additionally provide five-foot-wide sidewalks on both sides.

As demonstrated in the NHPH Draft EIR Section 4.13, *Transportation*, all NHPH operational transportation impacts were determined to be less than significant.

The commenter expresses concern about proposed deliveries associated with the New Hospital, and indicates that deliveries occurring in the evening or night hours is not mitigation.

As discussed in NHPH Draft EIR, page 3-27, loading for general hospital services would occur at rebuilt loading docks at the south side (rear) of Long Hospital. While not an issue that required analysis under CEQA, for informational purposes, Appendix TRANS in the NHPH Draft EIR discussed commercial loading dock operations at the Parnassus Heights campus site associated with increased commercial traffic. While no mitigation is required, Appendix TRANS did include a recommendation for a dockmaster to be used to manage deliveries and dwell times, and thus, better facilitate loading dock operations.

From:	Cynthia Travis
To:	Campus Planning - EIR
Cc:	Parnassus Neighbors
Subject:	Comments on the Draft EIR
Date:	Wednesday, February 9, 2022 5:31:50 PM

The Draft EIR for the new hospital at Parnassus Heights contains several claims that are factually incorrect. For instance, the document repeatedly states that the project will have no substantial impact on 1) scenic vistas; 2) shadows; 3) light or glare; 4) housing; and 5) transportation. It also claims to have 6) no conflict with applicable zoning regulations. This new hospital will be 300 feet tall and its base will rest above all the other structures in Cole Valley. That neighborhood consists of single family houses, and their zoning height limit is 40 feet. Clearly, a structure of the proposed size and height, on top of the highest roadside spot, **WILL** have a substantial negative impact on its neighbors' views, shadows and nighttime glare. 1

In addition, it has been recited elsewhere that the proposed hospital will add at least 9,0000 new visitors to UCSF's Parnassus site each day. However, the Draft EIR document also claims that the new hospital will have no substantial impact on housing or transportation. Again, by increasing the current pressure on scarce housing, scarce parking and overcrowded public transit in the immediate vicinity, the dramatic daily influx of new new patients, visitors and staff to UCSF's proposed new hospital **WILL** have a substantial negative impact on its residential neighbors. 2

For these reasons, I believe that the Draft EIR report is factually misleading. I also believe that UCSF should not go forward with this project without mitigating the aforementioned substantial negative impacts on its neighbors. Such mitigation would likely require a revised proposal for a much less bulky physical addition to its already congested Parnassus campus. 3

Cynthia Travis
58 Woodland Ave.
San Francisco, CA 94117

Responses to Comments from Cynthia Travis

I-Travis-1 The commenter asserts the NHPH Draft EIR contains several claims that are factually incorrect. The commenter cites, as examples, the NHPH Draft EIR's findings that the NHPH would have no substantial impact on scenic vistas, shadows, light or glare, housing, and transportation. The commenter adds at the end of the comment that a structure of the proposed size and height, on top of the highest roadside spot, will have a substantial negative impact on its neighbors' views, shadows and nighttime glare.

First, with respect to aesthetics, as discussed in Chapter 1, *Introduction*, the NHPH meets the criteria of Statute Section 21099(d) which states that aesthetic impacts of an employment center project on an infill site located within a transit priority area shall not be considered significant impacts on the environment. Nevertheless, the NHPH Draft EIR provides an assessment of potential aesthetic impacts since the public and decision-makers may be interested in information pertaining to the aesthetic effects of the proposed NHPH, and may desire that such information be provided as part of the environmental review process.

As demonstrated in Section 4.1, *Aesthetics, Wind and Shadow*; Section 4.12, *Population and Housing*; and Section 4.14, *Transportation*, the NHPH Draft EIR discusses the methodology used for evaluating impacts, analyzes the respective project and cumulative impacts pursuant to the significance standards established in the EIR, and identifies feasible mitigation measures (in this case, for light and glare, and disruption of travel conditions during construction) to reduce the significant impacts in these topic areas to a less than significant level. The requisite analyses, including for aesthetics, shadow and light/glare, were conducted in consideration of the campus site's location, terrain and elevation in relation to surrounding land uses, as was supported by detailed visual simulations, and shadow modeling. See also response to Comment I-Travis-2, below, for information on population and housing, and transportation issues.

The commenter also asserts disagreement with the NHPH Draft EIR's finding that the NHPH would have no conflict with applicable zoning regulations. The commenter indicates that the proposed hospital would be 300 feet tall, and above the single family houses and their zoning limits of 40 feet in the Cole Valley neighborhood. As explained Section 4.10, *Land Use and Planning*, in the case of Impact LU-1 (conflicts with land use plans, policies and regulations adopted for the purpose of mitigating an environmental impact), development and uses on property under the control of the University and that are in furtherance of the University's educational purposes, are not subject to local land use regulation. Accordingly, in this impact, Impact LU-1 evaluated significance as it relates to its potential to conflict with UCSF's 2014 LRDP and the 1976 Regents' Resolution as amended. As demonstrated in the NHPH Draft EIR, the NHPH would have a less than significant impact regarding these UCSF governing

documents. For informational purposes, the NHPH Draft EIR also finds that on balance, the proposed NHPH would not substantially conflict with the San Francisco General Plan and Better Streets Plan.

In Impact LU-2 (conflict with local land use regulations such that a significant incompatibility with adjacent land uses is created), it is acknowledged that the New Hospital would exceed the height limits in the City zoning on the site, the tallest City height limit on the site being 220 feet; however, similar to Impact LU-1, Impact LU-2 explains that the NHPH components within the campus site are exempt from the City's zoning. Impact LU-2 also explains that the New Hospital would be compatible and not create a significant land use impact with adjacent campus site land uses. Impact LU-2 reports the finding of Impact AES-2 that the New Hospital would be a noticeable visual change, and contrast sharply with nearby residential development. However, Impact LU-2 finds that the New Hospital would be consistent with the 2014 LRDP and Regents' Resolution as amended, as well as the amended UCSF Physical Design Framework, and would not conflict with applicable zoning and other regulations governing scenic quality. Impact LU-2 concludes that the New Hospital would not conflict with local land use regulations such that a significant incompatibility is created with adjacent land uses.

I-Travis-2 The commenter asserts that the daily influx of visitors and staff to the New Hospital will have a substantial negative impact on its residential neighbors, and cites increasing the pressure on scarce housing, scarce parking, and overcrowded public transit in the immediate vicinity.

The commenter is incorrect that the proposed NHPH would bring 9,000 people to the site. Please see NHPH Draft EIR Section 4.12 *Population and Housing*, Table 4.12-2, which identifies that the projected average daily (daytime) population of the NHPH would be 2,275 persons, including faculty, staff, patients, visitors, and vendors.

With respect to potential effects on housing, Impact POP-1 in the NHPH Draft EIR Section 4.12, *Population and Housing*, finds that implementation of the NHPH would induce population growth in the Bay Area, but the growth would not be substantial in comparison to growth that is projected and planned for San Francisco and the four other study area counties in *Plan Bay Area 2040* and the local General Plans for the study area communities. The residential units planned on the campus site under the CPHP will provide more on-campus housing to employees near their workplaces, including those that work in UCSF hospitals at the campus site. In addition, as part of the Memorandum of Understanding between UCSF and the City of San Francisco, UCSF has committed to providing additional off-campus housing beyond that called for in the CPHP. As such, the proposed NHPH impact related to population and housing would be less than significant.

With respect to parking, as discussed in Chapter 1, *Introduction*, the NHPH meets the criteria of Statute Section 21099(d) which states that parking impacts of an employment center project on an infill site located within a transit priority area shall not be considered significant impacts on the environment. As such, potential impacts of the NHPH on parking activity was not determined to be an impact under CEQA.

Furthermore, impacts on parking are not included in the CEQA Appendix G checklist for transportation. Accordingly, CEQA does not require that a project's effect on parking be analyzed. Please note that although parking was not considered in determining if the project has the potential to result in significant environmental impacts, the NHPH Draft EIR presents information regarding the existing parking supply in relation to the parking demand, both on- and off-street facilities, in the Parking Conditions section, pages 4.13-21 to 4.15-23 for context and for informational purposes. Furthermore, the supply of parking is fully considered in developing the changes in mode choice that would occur with the NHPH project; i.e., parking supply is factored into the analysis of how people choose to travel at the present time and how they would travel in the future as a result of a smaller increase in parking relative to the population increase (Mode Choice section, pages 4.13-30 to 4.13-34).

With respect to transit, the NHPH Draft EIR Impact TRANS-1 finds that the New Hospital would not conflict with the UC Plans and policies that address transit, including the 2014 LRDP; and furthermore, would not conflict with San Francisco's Transit First Policy. While UC does not consider effects on transit demand to be a significant impact under CEQA, for informational purposes, Appendix TRANS in the NHPH Draft EIR provided a qualitative discussion of potential impacts on transit operations.

I-Travis-3 The commenter asserts that for the reasons identified in Comments I-Travis-1 and I-Travis-2, the NHPH Draft EIR is factually misleading; that the project should not go forward with the project without mitigating the aforementioned impacts on its neighbors; and that such mitigation would likely require a revised proposal for a less bulky addition to the already congested campus site. As explained in responses to Comments I-Travis-1to - I-Travis 2, above, all impacts of the NHPH are adequately analyzed in the NHPH Draft EIR and mitigated to the extent feasible.

From: Michael Sullivan
To: Campus Planning - EIR
Subject: Support for Parnassus Hospital and draft EIR
Date: Saturday, February 12, 2022 5:27:02 PM

Dear Ms. Wong:
>
> We live in the Parnassus Heights neighborhood, two blocks from the UCSF hospital. We support the new hospital, and believe that the draft EIR was carefully and properly done. 1
>
> Best regards,
>
> Mike Sullivan and Paul Loeffler
> 59 Woodland Avenue
>
> Sent from my iPhone

Responses to Comments from Michael Sullivan and Paul Loeffler

I-Sullivan/Loeffler-1 The commenter expresses support for the New Hospital, and indicates the NHPH Draft EIR was properly completed. No response is required. However, this comment has been noted and will be forwarded to decision-makers.

EIR Comments re New Parnassus Hospital Tes Welborn 2-13-2022

- REVISED -

GENERAL COMMENTS ON THE EIR

1. While UCSF will self-certifiy this EIR, there are several other bodies, on pp. 1-6 and 1-7, that will have to give approve of a few of the actions that the plan requires. While UCSF has no doubt approached all of these bodies, these bodies can be approached by San Francisco residents to address matters that the public has raised and UCSF has ignored or brushed aside. 1
2. **UCSF does <u>not</u> present compelling, factual reasons** for the vast increase in size of new hospital. In fact, nearly every reason given was also true when the new hospital has planned and approved in the 2014 LRDP. These including an aging San Francisco population, new hospital standards, modern regulatory requirements and industry standards, and large private rooms. 2

The Covid-19 pandemic took very little of Parnassus hospitals' rooms. Yet UCSF then turns around and proposes a dense new hospital that may not be adaptable to stringent pandemics, and may actually facilitate virus spread. 3

UCSF has said that large private rooms are necessary for standardization and seriously ill patients. But there could be a significant portion of private rooms that could be smaller, saving space. 4

3. **4.1 Aesthetics.** Again, the current proposed site for the new hospital largely ignores that that a heavily built residential environment exists on three sides of the UCSF Parnassus campus [the fourth being the Sutro Reserve]. This giant tower will <u>block sun, shadow interior rooms, gardens, yards and decks, as well as solar panels</u>, is an exceptionally cruel action to take. 5

   Furthermore, many of the immediate neighbors actually work at UCSF. While these substantial impacts on neighbors are not officially part of the EIR process, UCSF should care more about the community around it. 6

   Many of the homes to the east are only a few hundred feet from the proposed construction site: Edgewood Avenue, Farnsworth, Belmont, and Willard. 7

   And major portions of Cole Valley will also experience considerable daytime shadow and noise. UCSF's ignoring of community interests is a major reason why the Cole Valley Improvement Association <u>withdrew</u> from the Community Advisory Group. 8

These losses to aesthetics - wind, shadow, as well as noise and vibration- these losses to residents' quality of life, will also result in a significant loss to homeowner property values. 9

4. **Planned new hospital height.** I note that UCSF has gone to exceptional lengths to <u>minimize</u> 10

the height of the proposed new hospital, and instead focuses attention on gross square feet in opening statements. This is deceptive. [see pp 1-1, 2-2, 3-13] The planned new hospital is so massive it would stand out from most of San Francisco. Putting a giant new hospital at the top of a hill on a two lane street also seems like an obvious poor choice. And this appears to be part of the reason that UCSF has chosen to bury actual building height. 10 cont.

5. **6.4 Geology and Soils**. The proposed lot is the steepest one on Parnassus. There have not been sufficient geological studies performed on this site. A nearby site on Mt. Sutro had a significant landslide. A new hospital should be built on stable land. It should not jeopardize staff and patients, nor hazard the significant financial investment. 11
6. **3.5 Project need.** UCSF says that it anticipates "that there will be a 14% increase in medically necessary transfers by 2030," and a variety of other assertions. All of these assertions lack documentation, and most, if not all, were not known when the 2014 LRDP new (smaller) hospital was approved. I have heard UCSF staff say that they turn away approximately 700 patients a year, but that is only 2-3 per day. 12

ALTERNATIVES

In general, all of the alternatives result in less impact on neighbors and the public. UCSF claims that it needs the large hospital on Parnassus, and on the particular lot now occupied by Langley-Porter, for "efficient" staffing. Yet UCSF already has built/occupied multiple hosptial sites in San Francisco, Mt. Zion, SF General, Mission Bay. Multiple hospital sites increase patient access to transportation and medical services, rather than a single site. Furthermore, multiple sites have benefits to the City of San Francisco in economic development. The City's MOU with UCSF includes these economic, as well as health, services. 13

6.3.2 Alternative 1B – A smaller hospital as approved in the 2014 LRDP.

This alternative is preferable because: 14

- It is just 110 feet tall and seven stories, with 17 feet of on-roof equipment
- In aggregate, it provides 431 campus hospital beds [140 new]
- UCSF does not present compelling, factual reasons for the vast increase in size of new hospital.

In fact, nearly every non-factual reason was also true in the new hospital planned and approved in the 2014 LRDP. These including an aging San Francisco population and new hospital standards, etc.

- There is no case made that significant factors changed within the 2-3 years before the commencement of planning the vastly expanded hospital.

Aesthetics

- **Impact AES-1** "no substantial adverse effect on a scenic vista"
  - This alternative would greatly reduce the gross scenic impact on San Francisco. Anywhere in the northern part of the city, a 300 foot tall building sticks out like a sore thumb. The alternative is much closer in height to existing campus buildings.
  - **Shadow.** The only shadow EIR officially considers is that on public schools and parks and this alternative would virtually eliminate the primary proposal's shadow impacts. And it goes further, in that the immediately adjacent housing to the east would not have their homes, solar panels, gardens, yards and decks, and windows thrust into shadow much of every day, and most of every day during winter months. This alternative wouldn't have such a gross impact on the resale value of these homes. Furthermore, because many of those immediate neighbors actually work at UCSF, this alternative benefits UCSF by reducing the impact on the quality of life of its staff.
  - **Air Quality, Noise and Vibration.** This alternative is highly preferable for all nearby residents, and particularly those who live on Edgewood, Farnsworth, Willard and Belmont. Many of those home lots are as close as 100-200 yards from the proposed hospital site. This alternative would reduce the amount of time residents face a living hell during work hours and work days. This is also true for Cole Valley area residents.
  - **Population and Transportation.** This alternative would greatly reduce the planned 8,000 daily additional persons on campus and arriving and leaving the campus. Parnassus Avenue is a narrow street with one lane in each direction. It is often congested at present. No additional parking construction has been proposed. This alternative would mean a much smaller impact on public transportation, private transportation, and alternative transportation means.
- **Moffit Hospital.** This alternative could still include the upgrades to Moffit Hospital proposed in the plan, adding more medical services. It doesn't appear to have been included in this alternative.

14 cont.

6.3.3 Alternative 2 – Reduced Project

A new hospital reduced to 212 feet in height, 629,000 gsf, 12 stories, and 288 beds, which added to Moffit Hospital, would result in campus total of 634 beds, only 48 less beds than the proposed plan.

- As discussed in the comparison of this Alternative with the planned project, Scenic Vistas, Scenic Quality,Wind and Shadow would be greatly reduced [pp 6-19 to 6-21].
- UCSF has grown inside a residential community and cannot disregard its plans impacts on neighbors. This Alternative more adequately considers neighbors east and north.

15

6.3.4 Alternative 3 – Phased hospital construction

This Alternative would include a "566,000 gsf, 13 story building." [p. 6-26] Note that UCSF has again deliberately not included actual physical height, concealing from the public the full impact of this alternative. One can imagine, based on other statements, that this alternative would be about 200 feet tall, substantially taller than current campus buildings. It would have considerable impacts in aesthetics, wind, noise, etc. over the prior two alternatives.

The phased portion calls for the demolition and replacement of Moffit Hospital. While there would be a delay in UCSF meeting the enormous increase in patients and staffing, this alternative would meet their target – which I have previously challenged as not based on factual data. UCSF only refers to "patient demand" [p.6-34].

The delayed hospital bed production would have positive and negative effects.

Negative: construction costs in the future are unpredictable

Positive: a shorter height hospital, achieves UCSF's bed count goal

Both positive and negative: longer construction period impacting neighbors, staff and patients

16

6.4 Alternative considered and dismissed

Each of these has a number of pluses that deserve more consideration, rather than quick dismissal.

6.4.1 New hospital at Mission Bay. This plus a smaller hospital at Parnassus would be a good compromise. It also supports the MOU with the City of San Francisco and spreading of economic growth throughout San Francisco. It reduces construction and transportation impacts at Parnassus, and aesthetic, wind, shadow impacts on residential neighbors.

17

6.4.2 New hospital on UC Hall site. A few lines on paper show a new RAB building at this site,

18

which has not been funded or designed. Combining that site with the current faculty building and/or part of the current dental complex make even the gigantic hospital building feasible. And it would be less of an eysore on Parnassus Avenue for the City of San Francisco. The bulk, as seen from city hall or Golden Gate Park, would be reduced.

18 cont.

6.4.3 This is the most specious argument of all! Page 6-37 states that "This potential alternative could result in UCSF hospitals operating at three different campus sites (Parnassus Heights, Mission Bay, and Mount Zion) which would be less than ideal and inefficient." I have news for UCSF: you already have three hospitals that you deliberately chose and built, and operate, after considerable community input.

UCSF's argument that a Mt. Zion site "would also result in decreased efficiency for UCSF staff and students..." apparently didn't stop UCSF from building three different sites. And many San Francisco residents appreciate having a hospital near them for medical services. Furthermore, in case of a disaster such as an earthquake, dispersed hospital locations are highly preferable. One site that could be blocked from access in an earthquake is poor planning.

19

UCSF could build on the more northern Mount Zion blocks, and purchase or lease the more southern blocks and build a smaller hospital, as approved in the 2014 LRDP, and supported by the larger community.

Responses to Comments from Tes Welborn

I-Welborn-1 The commenter notes other bodies besides UCSF with approval authority over certain actions that the plan requires. The commenter indicates all of these bodies can be approached by San Francisco residents to address matters that the public has raised and UCSF has ignored or brushed aside. The commenter expresses opinions that do not address the adequacy of the NHPH Draft EIR; consequently, as explained in **Master Response 1: Non-CEQA Comments**, no response is required. However, the comment has been noted and will be forwarded to decision-makers.

I-Welborn-2 The commenter asserts that UCSF does not provide compelling factual reasons for the increase in size of the New Hospital, and indicates that nearly every reason was also true when the new hospital was planned and approved in the 2014 LRDP, citing an aging city population, new hospital standards, modern regulatory requirements and industry standards, and large private rooms.

As discussed in Chapter 3, *Project Description*, subsequent to certification of the 2014 LRDP Final EIR, UCSF initiated a planning process to re-envision the Parnassus Heights campus site, which resulted in the development of the Comprehensive Parnassus Heights Plan (CPHP). Among other things, the CPHP updated the projected space needs for critical programs, including in patient care, and to improve the functional design of the campus site. The CPHP included a larger development program at the Parnassus Heights campus site, including a larger New Hospital, and a larger net increase of in-patient beds at the campus site, compared to that included in the 2014 LRDP. At the time of preparation of the CPHP, UCSF proposed a 955,000 gsf New Hospital, which under the NHPH has been reduced to a proposed 900,000 gsf.

Please also see Subsection 3.5, Project Need, pages 3-8 to 3.10 in the Project Description, which explains in detail the considerations factored by UCSF in projecting the space need for the New Hospital.

I-Welborn-3 The commenter asserts that the COVID-19 pandemic took very little of Parnassus Heights' hospital rooms, and then indicates UCSF proposes a dense new hospital that may facilitate a virus spread.

The COVID-19 pandemic has been a catalyst to provide greater focus on flexibility and preparedness for emergencies, while promoting efficiency and safety in care delivery for hospital design and operations. Design for the NHPH is emblematic of the emphasis on patient and staff safety and experience, maintaining the highest level of infection control protocols for all aspect of clinical care delivery. Design for the New Hospital includes design enhancements such as conversion ready rooms that are able to flex and adapt to

levels of acuity, additional airborne isolation rooms with improved air exchanges and the incorporation of technology to maximize patient care space and quality.

I-Welborn-4 The commenter points out that UCSF states that private rooms are necessary for standardization and seriously ill patients; and indicates that there could be a substantial portion of private rooms that could be smaller, saving space.

Please see response to Comment I-Kushner-4 for information on space requirements on patient room size.

I-Welborn-5 The commenter indicates the campus site is surrounded on three sides by residential development, and indicates the New Hospital will block sun, shadow interior rooms, gardens, yards and decks, as well as solar panels.

As demonstrated Section 4.1, *Aesthetics, Wind and Shadow* the NHPH Draft EIR discusses the methodology used for evaluating impacts, analyzes the respective project and cumulative impacts pursuant to the significance standards established in the EIR, and identifies feasible mitigation measures (in this case, for light and glare) to reduce the significant impacts in these topic areas to a less than significant level.

With respect to sun blockage and shadow creation, as explained in Impact AES-5 in the NHPH Draft EIR, the shadow analysis is limited to whether the NHPH would cast new shadow on publicly accessible open spaces in the vicinity of the campus site and whether this new shadow would adversely affect the use and enjoyment of these open spaces. Accordingly, the analysis assesses shadow impacts of the NHPH on three City parks (Golden Gate Park, Richard Gamble Memorial Park, and Grattan Playground), and on two schoolyards that participate in the Shared Schoolyard Project and provide public access on weekends (Independence High School and Grattan Elementary School). The Interior Greenbelt located adjacent to and east of the Reserve, and the Reserve itself located within the campus site, were also studied for this analysis. As analyzed in Impact AES-5, implementation of the NHPH would not adversely or substantially affect the use and enjoyment of these open spaces, and the impact was therefore concluded to be less than significant. Impact C-AES-4 determined that implementation of the NHPH in combination with cumulative projects reached a similar conclusion, and consequently, the cumulative shadow impact would also be less than significant.

I-Welborn-6 The commenter indicates many of the immediate neighbors actually work at UCSF, and that UCSF should care more about the community around it. The commenter expresses opinions that do not address the adequacy of the NHPH Draft EIR; consequently, as explained in **Master Response 1: Non-CEQA Comments**, no response is required. However, the comment has been noted and will be forwarded to decision-makers.

I-Welborn-7 The commenter indicates that many of the homes to the east are only a few hundred feet from the proposed construction site, and major portions of Cole Valley will also experience considerable daytime shadow and noise. With respect to how the NHPH Draft EIR analyzed shadow impacts, please see response to Comment I-Welborn-5, above.

With respect to noise, Section 4.11, *Noise and Vibration*, addresses all potential construction and operational noise impacts of the NHPH, and identifies mitigation measure to reduce potential noise impacts to the extent feasible.

I-Welborn-8 The commenter asserts that community interests were ignored by UCSF, and that is a major reason why the Cole Valley Improvement Association withdrew from the Community Advisory Group. The commenter expresses opinions that do not address the adequacy of the NHPH Draft EIR; consequently, as explained in **Master Response 1: Non-CEQA Comments**, no response is required. However, the comment has been noted and will be forwarded to decision-makers. See also **Master Response 3: Community Outreach**, which discusses the extensive community processes as well as changes made to the project in response to community feedback, including reducing the size of the project, revising the design so that it no longer encroaches into the Reserve, and reducing the mass of the structure by incorporating building setbacks at upper levels.

I-Welborn-9 The commenter asserts that losses to aesthetics, wind, shadow and noise and vibration affect quality of life, and result in a substantial loss to homeowner property values. As required by CEQA, environmental impacts associated with aesthetics, wind, shadow and noise and vibration are fully evaluated and disclosed in the NHPH Draft EIR in Sections 4.1 and 4.11. However, as explained in **Master Response 1: Non-CEQA Comments**, quality of life comments and socioeconomic comments are not under the purview of the NHPH EIR.

I-Welborn-10 The commenter asserts that UCSF attempts to minimize the height of the proposed New Hospital, instead focusing on gross square footage in opening statements. Please note the NHPH Draft EIR Chapter 3, *Project Description*, clearly discloses the proposed height of the New Hospital in text (page 3-13) and in illustrative graphics (Figures 3-7 through 3-10); as well as mentions the building height in Impact AES-1 (page 4.1-24), Impact AES-4 (page 4.1-46), Impact AES-5 (Page 4.1-58), Impact AIR-1 (page 4.2-26), and Impact LU-2 (page 4.10-19).

The commenter asserts that putting the New Hospital at the top of a hill on a two-lane street also seems like a poor choice. The commenter expresses an opinion that does not address the adequacy of the NHPH Draft EIR; consequently, as explained in **Master Response 1: Non-CEQA Comments**, no response is required. However, the comment has been noted and will be forwarded to decision-makers.

I-Welborn-11 The commenter asserts that the proposed lot is the steepest on Parnassus; that there have not been sufficient geological studies performed on the site; that a nearby site on Mt. Sutro had a substantial landslide; and that a new hospital should be built on stable land.

The commenter is referred to NHPH Draft EIR Section 4.6, *Geology and Soils*. The section relies in part on specific analyses conducted by UCSF's geotechnical consultant on the campus site and the NHPH site, including a geotechnical data report prepared in 2021, and campus-wide slope stability risk assessment prepared in 2019. These reports informed the NHPH Draft EIR description of campus site geological conditions, landslides and slope stability in the vicinity of NHPH site. The NHPH impact analysis disclosed all potential impacts associated with geology and soils, including risks from seismic groundshaking, and relatedly, with seismic ground failure (e.g., liquefaction) and landslides; erosion and loss of topsoil; and with potential unstable soils that may cause conditions such as landslides, lateral spreading, liquefaction and subsidence. In all cases, impacts were determined to be either less than significant, or mitigable to a less than significant level with implementation of feasible mitigation and compliance with applicable regulatory codes and requirements.

I-Welborn-12 The commenter quotes an excerpt from NHPH Draft EIR, Chapter 3, *Project Description*, that UCSF estimates there will be a 14 percent increase in medically necessary transfers by 2030. The commenter asserts that these and other statements lack documentation, and most, if not all, were not known when the 2014 LRDP new (smaller hospital) was approved. The commenter also anecdotally claims that UCSF staff turns away only two to three patients per day.

The forecasted bed demand for the future (2030 and beyond) is based on numerous factors, including:

- Recent historical increases in patient census projected into the future. UCSF has experienced a 19 percent growth in average daily census since 2016. This growth is expected to continue as the population ages and the demand for complex and specialized care increases.
- Sg2 Analytics, a healthcare analytics firm, projects growth rates by demographic regions based on market and population trends.
- Data that is kept that tracks the number of requests for transfer to UCSF that we are unable to accept. In the last 12-month period, there were 3,839 patients that were unable to transfer to UCSF who needed care that could not be received at health care facility where they were admitted. UCSF has evaluated all of these data sources three separate times between 2018-2021. Consistently, analysis has indicated that UCSF needs a hospital on the Parnassus site that can accommodate an average daily census of over 650 patients.

I-Welborn-13 The commenter argues that all of the alternatives result in less impacts on the neighbors and the public, and that building the New Hospital at a location other than the LPPI site would increase patient access to medical services.

As part of the NHPH Draft EIR analysis, the University did consider off-site locations for the proposed New Hospital, including locating the hospital at Mission Bay or at Mount Zion campus site (see NHPH Draft EIR Sections 6.4.1 and 6.4.3). However, both sites were not carried forth for detailed evaluation because locating the hospital at either location would not meet some of the key objectives of the proposed project and would result in additional traffic and air quality impacts from the travel between the Parnassus Heights campus site and the location of the New Hospital. As stated in the NHPH Draft EIR, operational efficiency is one of ten objectives of the proposed NHPH, that is "to site and develop a new inpatient facility in a way that optimizes operational activities with other clinical facilities at Parnassus Heights, such as Moffitt and Long Hospitals, and Medical Building 1." Co-location of clinical uses in the New Hospital alongside existing clinical uses would allow UCSF to operate more efficiently, allow the Moffitt, Long, and New hospitals to share resources, and also minimize intra-campus travel for patients and staff. Conversely, locating the hospital at an off-site location would not allow for this efficiency to be achieved and will result in inconvenience for patients, staff and students. Interdisciplinary collaboration is a hallmark of UCSF and key to the many breakthrough scientific discoveries by the institution. As all five professional programs (Medicine, Nursing, Pharmacy, Dentistry, and Physical Therapy) are established at Parnassus Heights, an off-site alternative would not foster collaboration given the distance between the off-site location and UCSF's main facilities.

I-Welborn-14 The commenter notes that Alternative 1B, which includes a smaller hospital that was included in the 2014 LRDP, is preferable because it is a shorter building than the proposed project, provides 140 new beds, and reduces the impacts of the proposed project on scenic vistas, shadows, air quality, noise and vibration, population, transportation. The commenter also states that the alternative could be modified to include the needed upgrades to Moffitt Hospital, and the commenter argues that the University has not made a strong case why this smaller hospital should be rejected in favor of the proposed larger hospital.

Alternative 1B is considered a No Project alternative as it represents a possible scenario that could be implemented by UCSF in the event that the proposed project is not approved by the Regents. The alternative was carried forth for detailed evaluation in the NHPH Draft EIR. The NHPH EIR fully describes the alternative, discloses its comparative impacts and evaluates its ability to meet key project objectives.

The NHPH Draft EIR acknowledges that this alternative would further reduce the proposed project's less than significant impact on scenic vistas. It would result in

less new shadows and therefore further reduce the proposed project's less than significant shadow impacts. It would also reduce the proposed project's construction and operational air quality, noise and vibration impacts, as well as population and transportation impacts.

However, this alternative would not meet the two key objectives of the proposed NHPH which are to provide an increased number of inpatient beds at the Parnassus Height campus site; and optimize the reuse of Moffitt Hospital by seismically retrofitting the building. Alternative 1B would not only provide substantially fewer beds than the proposed project (251 fewer beds than the NHPH) but would actually reduce the existing number of beds at Parnassus Heights campus site by 44 beds. In other words, the alternative does not address the main purpose of the project which is to provide more inpatient beds than are available at the present time. Even if Moffitt Hospital were renovated to provide additional beds as suggested by the commenter, only 49 beds could be added. Therefore, a modified Alternative 1B would increase the number of beds at the Parnassus Heights campus site by only 5 more beds compared to current conditions, and therefore would not meet the objective of addressing the need for more inpatient beds.

The commenter is directed to the discussion on the NHPH Draft EIR page 6-18, which explains why this alternative does not meet some of the other key objectives of the proposed project, including providing adequate space to meet industry and regulatory standards of contemporary hospitals, such as the ratio of operating rooms to pre- and post-recovery spaces. Contemporary hospitals also need to include sufficient space to accommodate modern technology, including telemedicine, robotics, and new diagnostic, imaging, testing, treatment, surgery and laboratory equipment. Please note that while Alternative 1B would provide 431 beds compared to 682 beds under the proposed project (a 37 percent reduction in number of beds), the amount of building space under this alternative (308,000 square feet) would reflect a 65 percent reduction from the 900,000 square feet of space under the proposed project. In other words, to keep the hospital at seven stories and to maximize the number of inpatient beds, the hospital under this alternative would not include some of the other clinical spaces that a modern hospital requires. The commenter is also referred to NHPH Draft EIR Section 3.5 in Chapter 3.0, *Project Description* which provides a discussion of the need for the proposed project, including why the additional space is needed at this campus site. The project is intended to further the research, education, and public service mission of the University of California. As the NHPH Draft EIR explains, the three missions of clinical care, education, and research are inter-dependent and require balanced support to ensure continued excellence. Therefore, the outdated Moffitt Hospital must be replaced with a state-of-the-art teaching and research hospital that is sized to serve the projected needs of the community.

I-Welborn-15 The commenter summarizes the main attributes of Alternative 2, Reduced Project Alternative, and notes that this alternative would greatly reduce the visual, wind and

shadow impacts of the proposed project. The commenter states that this alternative more adequately considers the neighbors to the east and north.

The comment regarding impact reduction under this alternative is consistent with the conclusions of the Draft EIR. The comment will be provided to the decision makers for consideration when deciding whether to approve the proposed project or an alternative.

I-Welborn-16 The commenter describes Alternative 3, Phased Hospital Construction, and notes that the NHPH Draft EIR does not report the actual height of the hospital under this alternative, and that the 13-story hospital would be substantially taller than the existing buildings and result in greater visual, wind, and noise impacts than the other alternatives considered in the NHPH Draft EIR. The commenter questions the need for the number of beds that would be provided in the New Hospital. The commenter further notes that the phasing would have positive effects that it would provide the number of beds that are needed in two buildings that are 10 to 13 stories high. The negative effects would be a prolonged period of construction and the late delivery of the second phase beds.

The comment is consistent with the description and analysis of Alternative 3 in the NHPH Draft EIR. Given the conceptual nature of this alternative, the specific height is not identified, although could be on the order of +/- 240 to 260 feet.

Regarding the need for the number of beds that would be provided in the New Hospital, please refer to the response to I-Welborn-12.

I-Welborn-17 The comment concerns the alternatives considered but dismissed from detailed evaluation. The commenter states that a new hospital at Mission Bay plus a smaller hospital at Parnassus Heights would reduce the impacts on the neighbors at Parnassus Heights.

The Draft EIR considered locating the New Hospital at Mission Bay but dismissed it from detailed evaluation as it would not provide the total number of beds that are needed. As discussed in Chapter 3, *Project Description*, under Project Need, there are bed shortages for critical and acute care in San Francisco, the greater Bay Area, and beyond, particularly for the adult tertiary and quaternary level of care provided by UCSF, primarily at Parnassus Heights. In addition, this potential alternative would not meet this growing demand, or allow for an expansion of emergency, surgical, interventional radiology, and imaging services, at the Parnassus Heights campus site. Co-location of clinical uses in the New Hospital would allow UCSF to operate more efficiently, allow the Moffitt, Long, and New hospitals to share resources, and also minimize intra-campus travel for patients and staff. Also, given that the Parnassus Heights campus site is the hub for the five professional programs and the majority of adult clinical care, the absence of a New Hospital at the Parnassus Heights campus site would not allow UCSF to achieve the benefits that can be realized through interdisciplinary collaboration and convergence between

clinical care, research, and education. Furthermore, by focusing future new clinical uses at the Mission Bay campus site, this potential alternative would also result in decreased efficiency for UCSF staff and students, and therefore have the potential to increase cross-town traffic between Parnassus Heights and Mission Bay campus sites, and related transportation effects and air emissions.

I-Welborn-18 The commenter states that with some modifications, the New Hospital on UC Hall site would be a good alternative to the proposed project as it would reduce the visual impacts of the proposed project.

The New Hospital under this alternative would be a 13- to 14-story structure, and therefore not as high as the 15-story New Hospital under the proposed project. Therefore, it is correct that this alternative would further reduce the proposed project's less than significant visual impacts. However, the alternative was found to be infeasible for a number of reasons that are discussed in the NHPH Draft EIR at pages 6-35 to 6-36, and was dismissed from detailed evaluation.

I-Welborn-19 The commenter states that the NHPH Draft EIR is incorrect in stating that operating hospitals at three different campus sites results in inefficiency, and that UCSF already has hospitals in three locations. The commenter further states that UCSF could develop more inpatient beds at the Mount Zion campus site and build a smaller hospital at the Parnassus Heights campus site.

As one of the country's leading health sciences campuses and UC's only campus focused exclusively on health sciences, UCSF's mission is to deliver instruction, conduct research, and provide clinical care. All three elements of its mission are inter-dependent and inextricably linked. Collaboration and discoveries that are the hallmark of UCSF are facilitated by physical adjacencies between clinical, research and instruction environments.

UCSF is recognized globally for innovative treatments, advanced technology and pioneering research applied to patient care. While serving the local community, UCSF is also major tertiary and quaternary referral center for patients from around Northern California, the West Coast, and across the nation. UCSF's quaternary care designation is the highest designation for facilities that can treat the most complex and specialized conditions.

UCSF Medical Center inpatient facilities consist of three main clinical sites at Parnassus Heights, Mission Bay, and Mount Zion campus sites, and maintains numerous primary care and specialty clinics throughout San Francisco and Northern California. The Parnassus Heights campus site is the oldest and largest of the UCSF campus sites, comprised of a tight network of interconnected facilities where faculty, physicians, learners, staff, and other are engaged in patient care, research and education activities.

The two main hospital facilities are at Parnassus Heights and Mission Bay, each with a distinct focus. The Mission Bay inpatient facilities consist of three specialty hospitals dedicated to children's, women's, and cancer care. The Parnassus Heights hospital facilities are the nexus of the majority of adult acute care, intensive care, emergency care, and a range of specialized services.

At Mount Zion, inpatient beds were only recently restored in the last two years on a limited basis. For example, to respond to an immediate need for increased bed capacity at the outset of the COVID-19 pandemic, a respiratory isolation unit for patients with infectious diseases was created at Mount Zion. Also, short stay inpatient stay surgical beds were added at Mount Zion, allowing for predictive workflows for patient throughput and more standardized care. In addition, inpatient psychiatric beds from LPPI are planned to be relocated to Mount Zion.

As noted above, each main campus site offers distinctly different services. Accordingly, each site requires unique medical equipment, staffing, clinical specialists, and support, with the added complexity of being a high-performing, tertiary and quaternary health system. The projected patient volume growth, driven largely by health care and demographic trends, support the need for a hospital of the size proposed even with the utilization of Mount Zion for the areas identified above. UCSF Health requires both the utilization of the Mount Zion and Mission Bay campus sites, in addition to an expanded hospital on the Parnassus Heights campus site. The cost of building on two sites simultaneously (to increase inpatient capacity at both Mount Zion and Parnassus Heights as suggested by the commenter) to address the demand, along with the cost and staffing inefficiencies involved in "splitting" adult services, is not practical. The plan for continued adult acute care, intensive care, emergency care and specialized services at Parnassus Heights, and the need for increased bed capacity proposed under the NHPH, along with the substantial support functions required to run a hospital, necessitates a hospital of the size proposed at the Parnassus Heights campus site.

The commenter refers to a prior statement that it would be inefficient to operate hospitals at three campus sites. While there are inefficiencies in operating at three separate sites, UCSF has come to the conclusion that the clinical need and patient volumes dictate that UCSF needs all three campuses to meet the current and evolving patient care volumes. Please refer the NHPH Draft EIR Project Description, *Section 3.5 Project Need*.

Laura D. Beaton
1 Hill Point Avenue
San Francisco, CA 94117
laura.d.beaton@gmail.com

Via Electronic Mail Only

Diane Wong
UCSF Real Estate - Campus Planning
654 Minnesota Street
San Francisco, CA 94143-0287
E-mail: EIR@ucsf.edu

Re: Draft EIR Comment - UCSF New Hospital at Parnassus Heights

Dear Ms. Wong:

I am writing on my own behalf regarding the Draft Environmental Impact Report ("Draft EIR") for the UCSF New Hospital at Parnassus Heights Project ("Project"). My family and I will be direct neighbors of the new hospital. We live less than 500 feet away on Hill Point Avenue, where my partner and I are raising our toddler and have another child on the way soon. Thus, construction of the new hospital, which would occur over seven years, would directly impact us for an extended period of time. 1

I am generally supportive of the new hospital and believe it is necessary to ensure that UCSF continues to provide world-class healthcare to the City and the region. However, I am concerned that the Draft EIR fails to comply with the California Environmental Quality Act ("CEQA"), Public Resources Code section 21000 et seq. CEQA is designed to ensure that public entities, like UCSF, are accountable for their actions that impact the environment. The statute does this in part by (1) requiring disclosure of a proposed project's environmental impacts, to inform both the public and decision makers and (2) requiring mitigation of the proposed project's significant impacts to the extent feasible. Disclosure of impacts and proposed mitigation are required in an EIR, which the California Supreme Court has described as "the heart of CEQA." *Laurel Heights Improvement Ass'n v. Regents of Univ. of Cal.* (1988) 47 Cal.3d 376, 392 (citations omitted). Specifically, the Court described the EIR as 2

> an environmental "alarm bell" whose purpose is to alert the public and its responsible officials to environmental changes before they have reached ecological points of no return. The EIR is also intended "to demonstrate to an apprehensive citizenry that the agency has, in fact, analyzed and considered the ecological implications of its action." Because the EIR must be certified or rejected by public officials, it is a document of accountability.

2 cont.

Id. (citations omitted).

After carefully reviewing the Draft EIR, I am concerned that it fails in a number of respects to comply with the requirements of CEQA. I believe these shortcomings could leave UCSF vulnerable to litigation that would delay the Project and deny the region access to an improved healthcare facility for possibly years. Risk of litigation aside, as a neighbor, I expect UCSF to comply with the law and correct the inadequacies of the Draft EIR discussed in this letter, which would directly impact myself and my family.

While there may be other shortcomings in the Draft EIR, here, I focus only on those that would directly impact my family: (1) failure to adequately disclose and mitigate the Project's impacts on air quality, and (2) failure to adequately mitigate the Project's construction noise impacts.

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I. AIR QUALITY

A. The Draft EIR does not adequately describe the actual health impacts of air pollution from the Project construction.

A significant shortcoming of the Draft EIR is that it fails to give the reader any clue of how the Project's increased air pollution during the seven years of construction would actually impact the health of sensitive receptors in the area. This issue is especially important to my family, as my very young children would be exposed to that pollution daily for years, and CEQA requires its disclosure. Specifically, CEQA requires that an EIR make "a reasonable effort to discuss relevant specifics regarding the connection between … the general health effects associated with a particular pollutant and the estimated amount of that pollutant the project will likely produce." *Sierra Club v. County of Fresno* (2018) 6 Cal.5th 502, 521. Only then can the public "make an informed decision [about the project], as CEQA requires." *Id.* The Draft EIR fails to make that

4

critical link between the amount of pollution anticipated and what health impacts are anticipated from *that specific increase in pollution*. 4 cont.

First, the Draft EIR identifies health effects of air pollutants. For example, the Draft EIR discloses that elevated levels of PM10 and PM2.5 are linked to "premature deaths, hospital admissions, emergency room visits, and asthma attacks," and "may significantly reduce lung function growth in children." Draft EIR at 4.2-4. Exposure to PM2.5 in particular is "strongly associated with mortality, respiratory diseases, and poor lung development in children, and other health effects, such as hospitalization for cardiopulmonary disease." *Id.* at 4.2-8. The Draft EIR also describes what kind of health impacts can result from exposure to Diesel Particulate Matter ("DPM"), and Toxic Air Contaminants ("TAC"). *Id.* at 4.2-7, 4.2-11. Children and the elderly are particularly sensitive to the health impacts of air pollutants. *Id.* at 4.2-12. 5

The Draft EIR then goes on to disclose that construction of the Project would result in increased emissions of air pollutants, including PM10 and PM2.5 – a significant impact. *Id.* at 4.2-27.

What the Draft EIR fails to do is link the *amount of increase* in air pollution from construction to *actual anticipated health impacts*. This incomplete analysis leaves the reader in exactly the situation that the California Supreme Court found to violate CEQA in *Sierra Club v. County of Fresno*. *See* 6 Cal.5th at 519-20 (EIR must both disclose what concentrations of pollutants would cause health effects and identify what concentrations would result from project). Like in that case, the Draft EIR here deprives its audience of the essential information necessary to link emissions and health impacts and to understand what the Project's real, on-the-ground impacts to human health would actually be. 6

B. The Draft EIR improperly defers identification of defined, enforceable mitigation for the Project's construction air pollution impacts.

The Draft EIR also improperly relies on deferred mitigation for air quality impacts. In particular, the Draft EIR discloses in Impact AIR-3 that construction of the Project would expose sensitive receptors – specifically, people who live near the construction site, like my family – to a cancer risk double the threshold of significance. Draft EIR at 4.2-31. The Draft EIR proposes to mitigate this significant impact by requiring the construction contractor to "develop a plan demonstrating that the off-road equipment used on-site to 7

construct the [Project] would achieve a fleet-wide average 70 percent reduction in PM10 exhaust emissions." *Id.* at 4.2-32. The Draft EIR then goes on to suggest a couple of options that could be included in this plan. *Id.* at 4.2-33.

7 cont.

Generally, an EIR must describe feasible mitigation, and "may not defer formulation of mitigation measures to a future time." *Preserve Wild Santee v. City of Santee* (2012) 210 Cal.App.4th 260, 280; *see also Golden Door Properties, LLC v. County of San Diego* (2020) 50 Cal.App.5th 467, 519-20. However, where the agency has identified practical considerations that prevent formulation of specific mitigation at the time of the EIR's preparation (*Preserve Wild Santee*, 210 Cal.App.4th at 280), identification of detailed mitigation measures can be deferred *only* if the EIR:

> (1) commits [the agency] to the mitigation,
> (2) adopts specific performance standards the mitigation will achieve, and
> (3) identifies the type(s) of potential action(s) that can feasibly achieve that performance standard and that will be considered, analyzed, and potentially incorporated into the mitigation measure

(Cal. Code Regs, tit. 14 ("CEQA Guidelines") § 15126.4(a)(1)(B)).

8

First, the Draft EIR does not explain why development of the mitigation plan must be delayed until after the Project is approved. UCSF can anticipate now what sort of construction will be required and what equipment will be needed to do that work. Thus, it has no practical reason why it cannot develop specific mitigation now that would be properly subject to review by and input from the public and decision makers.

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Further, while the mitigation measure purports to identify a performance standard of reducing PM10 emissions by at least 70 percent, it does not identify *what* that 70 percent reduction would be from, leaving the reader in the dark about how effective the required mitigation could actually be. What if, for example, the equipment used has *higher* emissions than anticipated by the EIR, and a 70 percent reduction in that equipment's emissions did not reduce emissions to a less than significant level? To be effective, a performance threshold must set a specific level of emissions at which mitigation requirements will be considered met. This is the only way to discern whether the impact would be mitigated to a less than significant level.

10

Additionally, the purported performance standard for the mitigation measure focuses only on PM10 reduction, but it does not explain how reducing PM10 emissions would end up reducing cancer risk. The Draft EIR should explain how PM10 emissions can be a proxy for all other emissions that could increase cancer risk (like PM2.5, DPM, and TAC) or it must provide for mitigation of other cancer-causing pollutants specifically. 11

Finally, if the EIR is revised to explain why deferred mitigation is necessary and to identify adequate performance standards, the EIR should also include a full suite of "the type(s) of potential action(s) that can feasibly achieve that performance standard and that will be considered, analyzed, and potentially incorporated into the mitigation measure" (CEQA Guidelines § 15126.4(a)(1)(B)) – not just describe "[o]ne feasible plan" that could be considered (*see* Draft EIR at 4.2-33). 12

II. CONSTRUCTION NOISE MITIGATION

The Draft EIR recognizes that construction noise – which will last over seven years – will be a significant and unavoidable impact (that is, even with the described mitigation, the impact will be significant). In light of the very real impact the noise from construction of the Project will have on sensitive receptors in the area – especially residents in the area who spend their days largely at home (e.g., small children, individuals working from home, retired people) – it is essential that the EIR provide for all feasible mitigation.

However, at least one of the mitigation measures set forth in the Draft EIR to address construction noise falls short of CEQA's requirement that mitigation be specifically described in the EIR. *See, e.g.*, *Sierra Watch v. Placer County* (2021) 69 Cal.App.5th 86, 110. Here, Mitigation Measure NOI-1a provides in part: 13

> Impact tools (e.g., jack hammers, pavement breakers, and rock drills) used for construction shall be hydraulically or electrically powered wherever possible to avoid noise associated with compressed air exhaust from pneumatically powered tools. Where use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used; this muffler can lower noise levels from the exhaust by up to about 10 dBA. External jackets on the tools themselves shall be used where feasible; this could achieve a reduction of 5 dBA. *Quieter procedures, such as use of drills rather than impact tools, shall be used where feasible.*

Draft EIR at 4.11-21 (emphasis added). The California Court of Appeal recently rejected a measure exactly as vague as this one. In *Sierra Watch v. Placer County*, one mitigation measure – like here – described some specific noise-reduction mitigation, then went on to require, vaguely, that "'operations and techniques' … 'be replaced with quieter procedures (e.g., using welding instead of riveting, mixing concrete off-site instead of on-site) where feasible and consistent with building codes and other applicable laws and regulations.'" 69 Cal.App.5th at 110. The Court held that the measure was impermissibly vague, explaining: 14

> This language, in effect, only tells construction contractors to be quieter than normal when they can. Although that may be good neighborly advice, it is not sufficient as a mitigation measure. It defers until later the determination of which construction procedures can feasibly be changed and how these procedures can be modified to be quieter. And it offers no instruction on how either of these determinations are to be made. It is inadequate as a result.

Id. Because the Draft EIR here takes the same, improper approach as was invalidated in *Sierra Watch*, Mitigation Measure NOI-1a must be revised to provide a specific and detailed list of quieter procedures that must be employed to reduce noise impacts on surrounding sensitive receptors. 15

III. CONCLUSION

My family and I appreciate UCSF's attention to these critical shortcomings in the Draft EIR. I know it is UCSF's goal to be a good neighbor. But to achieve this, UCSF must correct the issues I have identified in this letter, which are key to the health and wellbeing of the medical center's closest neighbors. This will ensure both compliance with CEQA and provide the proper attention to impacts of this significant project on UCSF's neighbors. 16

Best regards,

Laura D. Beaton

Responses to Comments from Laura Beaton

I-Beaton-1 The commenter indicates that the construction of the New Hospital would directly impact the commenter's family for an extended period of time. As discussed in **Master Response 2: General Comments on EIR and Environmental Topics**, due to lack of specificity in the comment, no direct response is possible. However, please see responses to Comments I-Beaton-3 to I-Beaton-15 that address specific comments raised below.

I-Beaton-2 The commenter indicates general support for the New Hospital and its purpose. This comment does not address the adequacy of the NHPH Draft EIR; consequently, as explained in **Master Response 1: Non-CEQA Comments**, no response is required. However, this comment has been noted and will be forwarded to decision-makers.

The commenter expresses concern that the NHPH Draft EIR fails to comply with CEQA. As discussed in **Master Response 2**, due to lack of specificity in the comment, no direct response is possible. However, please see responses to Comments I-Beaton-3 to I-Beaton-15 that address specific comments raised below.

The commenter cites CEQA case law. This comment does not address the adequacy of the NHPH Draft EIR; consequently, as explained in **Master Response 1**, no response is required.

I-Beaton-3 The commenter asserts that the Draft EIR fails in a number of respects to comply with the requirements of CEQA; and indicates the issues that would directly affect the commenter's family are 1) failure to adequately disclose and mitigate the Project's impacts on air quality, and 2) failure to adequately mitigate the Project's construction noise impacts. As discussed in **Master Response 2**, due to lack of specificity in the comment, no direct response is possible. However, please see responses to Comments I-Beaton-3 to I-Beaton-12 for responses to specific comment raised on air quality mitigation; and I-Beaton-13 to I-Beaton-15 for responses to specific comments raised on construction noise mitigation.

I-Beaton-4 The commenter expresses concern that the NHPH Draft EIR does not provide the public with information regarding the health impacts anticipated from the increase in pollutant emissions from project construction.

The NHPH Draft EIR provides a discussion of potential health hazard impacts from toxic air contaminants from both construction and operation of the proposed NHPH. NHPH Draft EIR Impact AIR-3 on pages 4.2-30 through 4.2-34 of the Draft EIR specifically address the health risks at localized receptors within 1,000 feet of the proposed NHPH site associated with project construction activities. This impact focuses on emissions of fine particulate matter ($PM_{2.5}$) and diesel particulate matter (DPM), as other construction emissions such as nitrogen

oxides and reactive organic gases are regional pollutants that contribute to ozone formation and are not a health concern to localized receptors.

As shown in Table 4.2-9 on page 4.2-31 of the NHPH Draft EIR, unmitigated construction-related emissions of DPM would result in an increased cancer risk exceeding the BAAQMD threshold of 10 in one million at the maximally exposed off-site receptor, while emissions of $PM_{2.5}$ would be below the BAAQMD threshold of 0.3 micrograms per cubic meter and the resultant hazard index would be below the BAAQMD threshold of 1.0. Consequently, the NHPH Draft EIR identified a significant impact with respect to increased cancer risk for off-site receptors. NHPH Mitigation Measure AIR-3 is identified to require the use of clean construction equipment during NHPH construction. Implementation of NHPH Mitigation Measure AIR-3 would reduce DPM emissions generated by the NHPH construction activities so that increased cancer risk would be below the BAAQMD threshold of 10 in one million at the maximally exposed receptor; and consequently, would mitigate the impact to a less than significant level.

I-Beaton-5 The commenter acknowledges that the NHPH Draft EIR discusses the health effects of particulate matter and DPM and then contends that the NHPH Draft EIR identifies a significant impact with respect to emissions of PM_{10} and $PM_{2.5}$ on page 4.2-27.

The commenter is correct that the NHPH Draft EIR discusses the potential health effects of particulate matter and DPM exposure in Section 4.2.1, *Environmental Setting*. The commenter is incorrect with regard to the NHPH Draft EIR's finding of significance with respect to construction-related emissions of PM_{10} and $PM_{2.5}$ on page 4.2-27. Table 4.2-7 of the NHPH Draft EIR shows that the maximum average daily unmitigated emissions of PM_{10} and $PM_{2.5}$ would be 0.4 and 0.3 pounds per day, respectively. These emissions are substantially below the BAAQMD's thresholds for these construction emissions of 82 and 54 pounds per day, respectively. Therefore, the NHPH Draft EIR identified a less than significant impact with respect to construction-related emissions of PM_{10} and $PM_{2.5}$.

As stated on page 4.2-21 of the NHPH Draft EIR, these thresholds were developed by BAAQMD to assess the potential for a project to result in cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or State ambient air quality standard by applying the State and federal Clean Air Acts emissions limits for stationary sources. These levels represent emissions below which new sources are not anticipated to contribute to an air quality violation or result in a considerable net increase in criteria air pollutants that could result in increased health effects.

I-Beaton-6 The commenter contends that the NHPH Draft EIR does not provide the public with information regarding the health impacts anticipated from the increase in pollutant emissions from project construction.

The commenter is incorrect. Please refer to the response to Comment I-Beaton-4, above for the discussion on how the NHPH Draft EIR analyzes the potential health-related impacts that could arise from construction activities associated with the NHPH. Additionally, please refer to the response to comment I-Beaton-5, above for the discussion on how the NHPH Draft EIR analyzes the potential health related impacts associated with increased emissions of criteria air pollutants generated during construction.

The commenter also cites the findings of the California Supreme Court in *Sierra Club v. County of Fresno* which found that an EIR must both disclose what concentrations of pollutants would cause health effects and identify what concentrations would result from project. However, unlike the air quality significance determination for that EIR, the Draft EIR for the NHPH identified a less than significant impact with respect to emissions of criteria air pollutants which are below significance thresholds of the BAAQMD that were developed to address regulatory thresholds.

I-Beaton-7 The commenter is concerned that the NHPH Draft EIR defers identification of mitigation for the project's construction-related impacts.

The commenter is correct that the NHPH Draft EIR identifies a significant impact with respect to construction related emissions of DPM in Impact AIR-3 and then identifies NHPH Mitigation Measure AIR-3 to address this potential significant impact. NHPH Mitigation Measure AIR-3 requires construction contractor(s) to develop a plan demonstrating that the off-road equipment used on-site to construct the NHPH would achieve a specified performance standard of a fleet-wide average 70 percent reduction in PM_{10} exhaust emissions, compared to uncontrolled aggregate statewide emission rates for similar equipment. Because this mitigation measure identifies a specific performance standard to achieve the required reduction in emissions necessary to reduce the impact to a less than significant level and because the mitigation measure identifies specific methods that have been demonstrated to be capable of achieving the reductions of the performance standard, NHPH Mitigation Measure AIR-3 does not represent deferred mitigation under CEQA.

I-Beaton-8 The commenter is concerned that NHPH Mitigation Measure AIR-3 of the NHPH Draft EIR represents deferred mitigation under CEQA for the project's construction-related impacts.

NHPH Mitigation Measure AIR-3 requires construction contractor(s) to develop a plan demonstrating that the off-road equipment used on-site to construct the NHPH would achieve a specified performance standard of a fleet-wide average

70 percent reduction in PM_{10} exhaust emissions, compared to uncontrolled aggregate statewide emission rates for similar equipment. Because this mitigation measure identifies a specific performance standard to achieve the required reduction in emissions necessary to reduce the impact to a less than significant level and because the mitigation measure identifies specific methods that have been demonstrated to be capable of achieving the reductions of the performance standard, NHPH Mitigation Measure AIR-3 does not represent deferred mitigation under CEQA.

I-Beaton-9 The commenter suggests that UCSF should have the contractor prepare the emissions reduction control plan required under NHPH Mitigation Measure AIR-3 now to be included as part of the EIR rather than deferring this to a later date.

CEQA requires that an EIR identify ways in which significant environmental impacts can be lessened in severity or avoided, including by the adoption of feasible and effective mitigation measures (State CEQA Guidelines Section 15126.4). To this end, mitigation measures must reduce the severity of potentially significant impacts, their effectiveness must be clear, and they must be enforceable (State CEQA Guidelines Section 15126.4(a)). Although formulation of mitigation measures cannot be deferred until some future time, State CEQA Guidelines Section 15126.4(a)(1)(B) provides:

> *The specific details of a mitigation measure, however, may be developed after project approval when it is impractical or infeasible to include those details during the project's environmental review, provided that the agency (1) commits itself to the mitigation, (2) adopts specific performance standards the mitigation will achieve, and (3) identifies the type(s) of potential action(s) that can feasibly achieve that performance standard that will be considered, analyzed, and potentially incorporated in the mitigation measure.*

In the current case, the reason is that the effectiveness of various mitigation strategies is likely to change over time, and thus, flexibility is required to ensure that strategies can adapt and be refined as long as a performance standard is met. NHPH Mitigation Measure AIR-3 contains performance standards that are quantitative. The mitigation measures also contain a list of *required* actions, a menu of other specific actions that may be used to supplement the required actions, and a process for ensuring that the performance standard is met. This type of "menu" approach to a mitigation measure is not "deferred" because the specific actions are identified that can be combined and quantitatively calculated to meet the performance standard.

I-Beaton-10 The commenter is concerned that the required performance standard of NHPH Mitigation Measure AIR-3 does not specify a reference baseline for its targeted reduction of 70 percent.

The text of NHPH Mitigation Measure AIR-3, on pages 4.2-32 and 4.2-33, specifically states that the 70 percent reduction in PM_{10} exhaust emissions should be compared to that from uncontrolled aggregate statewide emission rates for similar equipment. The unmitigated scenario risk emissions presented in Table 4.2-9 of the NHPH Draft EIR assumed aggregate statewide emission rates for equipment as calculated by the CalEEMod model and based on the OFFROAD2011 emission factor model.

NHPH Mitigation Measure AIR-3 suggests that all mobile diesel-powered off-road equipment larger than 25 horsepower and operating on the project site for more than two days continuously shall be equipped with engines meeting USEPA NOx and PM_{10} emissions standards for Tier 4 final engines or equivalent. These engines would result in the reduction of emissions sufficient to reduce risks as indicated in Table 4.2-10.

I-Beaton-11 This commenter requests information on why PM_{10} emissions are an appropriate proxy for DPM emissions and is concerned about $PM_{2.5}$ and other toxic air contaminants (TACs) as well.

For the HRA analysis, it is assumed that DPM is the same as exhaust PM_{10}. Given that $PM_{2.5}$ is a subset of PM_{10}, the use of PM_{10} as a surrogate for DPM results in more conservative (i.e., overestimate) concentrations than using $PM_{2.5}$ as a surrogate for DPM.[2] All health risk analyses used the toxicity values for DPM. DPM is the only TAC of concern associated with construction. The operational health risk assessment considered other TACs such as fume hood emissions of various TACs used in UCSF's analysis and research at the NHPH. Refer to Appendix AIR of the NHPH Draft EIR for more detail.

DPM is a subset of $PM_{2.5}$, and $PM_{2.5}$ analysis is separate from DPM, consistent with BAAQMD guidance. Table 4.2-9 of the NHPH Draft EIR shows that unmitigated construction-related emissions of $PM_{2.5}$ exhaust would be less than significant.

I-Beaton-12 This commenter suggests that if the NHPH Draft EIR is revised to explain why deferred mitigation is necessary, it should include a full suite of actions incorporated into NHPH Mitigation Measure AIR-3.

As discussed above in response to Comment I-Beaton-7, NHPH Mitigation Measure AIR-3 requires construction contractor(s) to develop a plan demonstrating that the off-road equipment used on-site to construct the NHPH would achieve a specified performance standard of a fleet-wide average 70 percent reduction in PM_{10} exhaust emissions, compared to uncontrolled

[2] Refer to CARB's information page at (*https://ww2.arb.ca.gov/resources/overview-diesel-exhaust-and-health#:~:text=5%2C%20DPM%20also%20contributes%20to,decreased%20lung%20function%20in%20children*) for more detail.

aggregate statewide emission rates for similar equipment. Because this mitigation measure identifies a specific performance standard to achieve the required reduction in emissions necessary to reduce the impact to a less than significant level and because the mitigation measure identifies specific methods that have been demonstrated to be capable of achieving the reductions of the performance standard, NHPH Mitigation Measure AIR-3 does not represent deferred mitigation under CEQA and no revisions are required. Because the performance standard and methods of achieving the performance standard identified in NHPH Mitigation Measure AIR-3 are sufficient to reduce risks to a less than significant level, as demonstrated in Table 4.2-10 on page 4.2-32 of the NHPH Draft EIR, no further mitigation measures or suite of actions are required or necessary to be implemented to achieve this less than significant impact with mitigation.

I-Beaton-13 The commenter calls into question for lack of specificity one mitigation measure which provides for measures to address impact tools included as part of NHPH Mitigation Measure NOI-1a: Construction Noise Control Measures.

The referenced mitigation measure addresses methods by which noise from impact tools may be reduced in an effort to include all feasible mitigation measures. It specifies what available measures can possibly be implemented if conditions allow and what the associated reductions in noise may be expected. Therefore, the measure is specific to a variety of noise control actions, and the potential resultant noise reduction that may be expected.

I-Beaton-14 The commenter contends that the measure to address impact tools included as part of NHPH Mitigation Measure NOI-1a: Construction Noise Control Measures is invalid based on the California Court of Appeal's finding in *Sierra Watch v. Placer County*, such that it acknowledges that some of the measures may not be feasible for certain tasks and conditions encountered by the construction contractor.

The referenced mitigation measure addresses methods by which noise from impact tools may be reduced in an effort to include all feasible mitigation measures for an impact identified as significant and unavoidable. Because the measures may not be reasonably implemented in some situations does not mean that they should be discarded out of hand. Please refer to the response to comment I-Beaton-15, below, which has resulted in a revision to NHPH Mitigation Measure NOI-1a to provide a mechanism by which contractors must substantiate infeasibility of specific measures for UCSF approval.

I-Beaton-15 This commenter suggests that the measure to address impact tools included as part of NHPH Mitigation Measure NOI-1a: Construction Noise Control Measures should be revised provide a specific and detailed list of quieter procedures that must be employed.

In response to this comment, the text of the second bullet of NHPH Mitigation Measure NOI-1a: Construction Noise Control Measures has been revised. Please see Section 8.5, *Revisions to the Draft EIR*, for the edits made to NHPH Mitigation Measure NOI-1a.

I-Beaton-16 The commenter indicates UCSF must correct the issues identified in the comment letter, and ensure both compliance with CEQA and provide the proper attention to impacts of this project on UCSF's neighbors.

As demonstrated in the responses, above, the NHPH Draft EIR adequately addressed all potential environmental impacts associated with the NHPH, including those air quality and noise issues cited by the commenter, and identified mitigation to reduce all significant impacts to the extent feasible.

From: Sarah Jones
To: Campus Planning - EIR
Subject: UCSF NHPH EIR comments
Date: Monday, February 14, 2022 2:50:35 PM

To Whom it May Concern:

After several years of public comment and attending meetings, feeling that my concerns have been unheard and unabated, I am once again commenting on the UCSF EIR for the New Hospital at Parnassus Heights. 1

First and foremost, UCSF's new project anticipates bringing upwards of 8000 more people on campus a day, but has established neither adequate public transportation nor parking nor housing for them. This is a huge increase in the number of people in a relatively tight space and the tiny number of housing units proposed in the larger plan to be built in 20 years does not mitigate it in the slightest. Our streets will be jammed with vehicles, parking will be impossible, to say nothing of increased power and sewer needs. 2

Second, the noise from UCSF is already overwhelming most days, and UCSF proposes to cut down the trees in Sutro Forest between Medical Center Way and Edgewood Avenue starting tomorrow (2/15/22), further decimating the sound barrier between the neighborhood and the hospital before demolition and construction. Although trees will be replanted, it will take at least a decade for them to reach a size and girth to once again provide the noise and pollution barrier that would be needed during and after construction. 3

Next, the pollution created by the demolition, rebuilding and the everyday use of the hospital will directly affect the children living on Edgewood Ave. and neighboring streets. The plans for mitigating the number of large and fine pollutants in the air are inadequate and the building and running of the hospital will substantially degrade the air quality of the neighborhoods and cause harm to those communities. 4

Finally, UCSF has conducted some of the worst community outreach I have ever had the misfortune to be a part of. Instead of receiving input and trying to find a compromise, UCSF has come to the (virtual Zoom) table with their plans set in stone, unwilling to discuss changes or meaningful mitigation. Instead of addressing, for example, how 8000 more bodies on campus will affect the neighborhood and coming up plans to assuage the very real concerns of the surrounding communities, UCSF instead asked whether neighbors would like more trees planted, or more bike racks installed, sidestepping and ignoring the very real concerns of traffic, parking and resources. And then they have the nerve to assert they have been working with the neighborhood organizations. It's been a poor show of community engagement, and university/neighborhood relations now are at a nadir. 5

Sincerely,
Sarah Smith Jones
President, Edgewood Association

Responses to Comments from Sarah Jones

I-Jones-1 The commenter asserts that the commenter's concerns have been unheard and unabated. This comment does not address the adequacy of the Draft EIR; however, please see responses to specific issues raised in responses to Comments I-Jones-2 through I-Jones-5, below.

I-Jones-2 The commenter asserts that UCSF has not established public transportation, parking or housing that would be associated with the NHPH population.

The commenter is incorrect that the proposed NHPH would bring 8,000 people to the site. Please see NHPH Draft EIR Section 4.12 *Population*, Table 4.12-2, which identifies that the projected average daily (daytime) population of the NHPH would be 2,275 persons, including faculty, staff, patients, visitors, and vendors.

With respect to public transportation, the NHPH Draft EIR Impact TRANS-1 finds that the New Hospital would not conflict with the UC Plans and policies that address transit, including the 2014 LRDP; and furthermore, would not conflict with San Francisco's Transit First Policy. While UC does not consider effects on transit demand to be a significant impact under CEQA, for informational purposes, Appendix TRANS in the NHPH Draft EIR provided a qualitative discussion of potential impacts on transit operations.

With respect to parking, as discussed in Chapter 1, *Introduction*, the NHPH meets the criteria of Statute Section 21099(d) which states that parking impacts of an employment center project on an infill site located within a transit priority area shall not be considered significant impacts on the environment. As such, potential impacts of the NHPH on parking activity were not determined to be an impact under CEQA.

Furthermore, impacts on parking are not included in the CEQA Appendix G checklist for transportation. Accordingly, CEQA does not require that a project's effect on parking be analyzed. Please note that although parking was not considered in determining if the project has the potential to result in significant environmental impacts, the NHPH Draft EIR presents information regarding the existing parking supply in relation to the parking demand, both on- and off-street facilities, in the Parking Conditions section, pages 4.13-21 to 4.15-23 for context and for informational purposes. Furthermore, the supply of parking is fully considered in developing the changes in mode choice that would occur with the NHPH project; i.e., parking supply is factored into the analysis of how people choose to travel at the present time and how they would travel in the future as a result of a smaller increase in parking relative to the population increase (Mode Choice section, pages 4.13-30 to 4.13-34).

With respect to potential effects on housing, Impact POP-1 in the NHPH Draft EIR Section 4.12, *Population and Housing*, finds that implementation of the NHPH would induce population growth in the Bay Area, but the growth would not be substantial in comparison to growth that is projected and planned for San Francisco and the four study area counties in *Plan Bay Area 2040* and the local General Plans for the study area communities. It should also be noted that the estimated NHPH growth reported in Section 4.12 are likely overstated, as some of the employment growth associated with the NHPH was previously included in the 2014 LRDP and potentially already accounted for in *Plan Bay Area 2040*. The residential units planned on the campus site under the CPHP will provide more on-campus housing to employees near their workplaces, including those that work in UCSF hospitals at the campus site. In addition, as part of the Memorandum of Understanding (MOU) between UCSF and the City of San Francisco, UCSF has committed to providing additional housing beyond that called for in the CPHP. In accordance with the MOU, UCSF will deliver a total of 1,263 net new units in San Francisco, half delivered by 2030, with the remaining half divided equally by 2040 and 2050. This includes the 762 net new housing units at Parnassus Heights analyzed in the CPHP EIR. In addition, UCSF has agreed under the MOU to explore and develop additional housing in other parts of the City to accommodate UCSF students and employees, including those that study and/or work at Parnassus Heights. These would include 71 units of faculty housing at 2130 Post Street, and about 230 units in the Civic Center in collaboration with UC Hastings; both projects completed CEQA environmental review. Also, as part of the MOU, UCSF committed to facilitating the delivery of 200 additional units in the future in the City that could simply be met by an in lieu payment to the City and for which the City would complete CEQA review of such units. As such, the proposed NHPH impact related to population and housing would be less than significant.

I-Jones-3 The commenter is concerned that the removal of vegetation on the hillside east of the NHPH site may require a reexamination of the assessment of and noise impacts from the NHPH.

With respect to the analysis of noise impacts of the NHPH, all modeling of noise levels conservatively did not consider any attenuation associated with vegetation. Caltrans reports that research on the shielding effectiveness of vegetation concluded that the mean noise reduction was less than 1 dBA, and ranged from 0 dBA to less than 3 dBA.[3] The research further concluded that such vegetative barriers were not an effective measure to reduce noise on a routine basis. Consequently, the removal of vegetation on the hillside has no effect on the analysis of noise impacts in the NHPH Draft EIR.

3 Caltrans, 2013. *Technical Noise Supplement to the Traffic Noise Analysis Protocol*, September 2013.

I-Jones-4 This comment raises concerns that the construction and operation of the NHPH would result in air quality and health risk impacts to children that are not adequately mitigated in the NHPH Draft EIR.

Construction-related air quality impacts from criteria air pollutants are addressed on pages 4.2-26 through 4.2-29 of the NHPH Draft EIR. Average daily construction-related exhaust emissions of reactive organic gases, nitrogen oxides, particulate matter (PM_{10}) and fine particulate matter ($PM_{2.5}$) were modeled and determined to be less than the BAAQMD their recommended thresholds which represents a cumulatively considerable contribution to air pollution and, therefore, these exhaust emissions were determined to be less than significant and no mitigation measures were required. Construction dust impacts were found to be potentially significant and NHPH Mitigation Measure AIR-1 was identified, which implements BAAQMD best management practices for controlling fugitive dust which would reduce construction-related fugitive dust impacts to a less than significant level.

The NHPH Draft EIR considers the health impacts of emissions of diesel particulate Matter (DPM) and $PM_{2.5}$ on pages 4.2-20 through 4.2-34 for construction-related emissions and pages 4.2-34 through 4.2-36 for operational emissions of the NHPH. These analyses were conducted using the latest guidance of the BAAQMD and the state Office of Environmental Health Hazard Assessment (OEHHA). These analyses consider residential, day care and school receptors and, consistent with OEHHA guidance.

With respect to emissions of DPM, as discussed in Appendix AIR of the Draft EIR, the analysis was prepared in accordance with OEHHA *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments.* the last step was accomplished by applying the highest estimated concentrations of TAC at the receptors analyzed to the established cancer potency factors and acceptable reference concentrations for non-cancer health effects. Increased cancer risks were calculated using the modeled TAC concentrations and OEHHA-recommended methodologies for both a child exposure (starting at 3rd trimester) as well as daycare and school exposure. The cancer risk calculations were based on applying the OEHHA-recommended age sensitivity factors and breathing rates, as well as fraction of time at home and an exposure duration of 30 years. Age-sensitivity factors reflect the greater sensitivity of infants and small children to cancer causing air pollutants. Construction-related health risk impacts were determined to be significant and NHPH Mitigation Measure AIR-3 was identified to require the contractor to reduce emissions through development of a Plan the requires clean construction equipment. Modeling of the mitigated scenario demonstrated that health risks would be reduced to values deemed less than significant by the BAAQMD.

The NHPH Draft EIR also includes a localized analysis of $PM_{2.5}$ concentrations from construction and compares predicted resultant concentrations to the BAAQMD annual average threshold of 0.3 micrograms per cubic meter. This concentration is the U.S. EPA staff-proposed significant impact level for $PM_{2.5}$ in order to permit to emit a regulated pollutant in an area that meets the National Ambient Air Quality Standard (NAAQS). The NAAQS were developed by EPA to represent the maximum amount of a pollutant averaged over a specified period of time that can be present in outdoor air without harming public health, and thus, it defines clean air. As indicated by Table 4.2-9 of the NHPH Draft EIR, resultant $PM_{2.5}$ concentrations from construction would be 0.06 micrograms per cubic meter and, thus, would not represent a potential health impact to people, including children.

Similarly, a health risk analysis was conducted for operation of the NHPH and is addressed on pages 4.2-34 through 4.2-36 of the NHPH Draft EIR. This analysis also considered age sensitivity factors and breathing rates to include consideration of exposure to children. Emissions calculations and air dispersion modeling was completed for the New Hospital building's fume hoods, cooling tower and emergency diesel generators, the increase in natural gas combustion at the Central Utilities Plant, and loading dock emissions associated with increased deliveries. As indicated in Table 4.2-11, operational health risk impacts would be less than significant and no mitigation is required.

I-Jones-5 The commenter expresses concern for the community outreach that has been conducted by UCSF. **Please see Master Response 3: Community Outreach**.

From: Lisa Kessler
To: Campus Planning - EIR; Wong, Diane C.
Subject: draft EIR comment
Date: Monday, February 14, 2022 10:32:19 AM

Comment on NH Draft EIR
Attn: Diane Wong, UCSF Campus Planning
February 14, 2022

After decades of mutual cooperation and respect, UCSF has demonstrated that the health and safety of the residents and families who live adjacent to campus are no longer relevant to them. The New Hospital draft EIR is filled with inadequate data, vague assumptions, handwaving, excuses, and empty promises. UCSF must be forced to take into account the significant environmental impacts that their New Hospital Plan has on the neighborhood, the Mt Sutro Preserve greenspace, the larger community, and the city of San Francisco. 1 2

1. **Air Quality** - UCSF's mitigation plans for dealing with the air quality, particulate matter, increased cancer risks, and toxic exposure are inadequate. This is the air that my children and all the neighborhood children on our street breathe every day of their lives. The data UCSF offers doesn't make sense, with vague mitigation strategies that seem to magically bring the numbers down to "less than significant" without any convincing analysis. I believe that this is because given the scope of the project, it is simply not possible to mitigate the health impacts on the surrounding neighborhoods without fudging the numbers. I would like to see an independent review of UCSF's air quality, toxicology, and cancer risk data and analysis, and more detailed explanations of their proposed mitigation strategies. 3 4
2. **Pediatric impacts** - Many children are the "sensitive receptors" who live in the homes on Edgewood closest to the construction. UCSF must provide data on the impact of anticipated nitrogen dioxide, ozone, coarse particulate matter (PM10), fine particulate matter (PM2.5), and sulfur dioxide exposures from this project specifically on the health of neighborhood children, including pediatric asthma and other short and long term respiratory effects. 5
3. **Noise** - existing noise from the current power plant is already extremely disruptive and bothersome. The expected noise during the construction, and in perpetuity from the operations of the new hospital building, are far above what is reasonable and legal, especially for the occupants of residences on Edgewood Avenue. It appears that UCSF's "mitigation strategy" is to give noise data based on estimated decibel levels indoors with closed windows and soundproof glass. Is the expectation that neighbors shouldn't be able to open their home windows or be outdoors on their property without being exposed to not just annoying noise, but a noise level that is dangerous to their hearing and mental health? This is inexcusable and UCSF must not proceed until they can ensure the noise of the construction and NH operations can be mitigated adequately. 6
4. **Vegetation Barrier** - In response to my previous comment in the CPHP EIR about noise and air pollution concerns, UCSF responded in the CPHP EIR stating "there is a vegetated hillside between the campus site and the residences to the east, including those on Edgewood Avenue. This vegetated hillside provides approximately 200 feet of buffer between the residences and any structures to the west." It continues by explaining that their analysis and modeling was done with existing topography and conditions. Now, UCSF plans to remove most of this existing vegetation - a project which conveniently starts removal the *day after the draft EIR comment deadline*. The removal of hundreds of feet of dense vegetation buffer and mature trees which effectively screens the homes on Edgewood from the construction site cannot be accounted for with "cumulative analysis". UCSF must redo their noise and air quality analysis after the vegetation barrier is removed so that the impact and mitigation strategies for the health and safety of the neighbors can be accurately assessed. Photos of the existing vegetation and screening are attached below; I will resubmit new photos after the vegetation removal to demonstrate the significant decrease in the "vegetation buffer" and the potential impact on the sensitive receptors to the east of the project. 7
5. **Transportation/traffic/housing** - the impact of the proposed workforce population increase on the city is going to be incalculable. UCSF cannot solve this problem with shuttle buses and electric bicycles. Their inability to account for this massive increase is so inadequate that it is absurd. Every business in the city of San Francisco must account for increases in workers/workspace with respect to demands on transportation and availability of affordable housing and UCSF should not be exempt from this requirement. 8 9
6. **Community engagement** - UCSF has lied and evaded their way through two years of disingenuous community engagement on this project. They have silenced all opposition and used "zoom" to host meetings that are basically marketing presentations that neither respond to community concerns nor invite reasonable community participation. Even as a member of the CPHP Community Advisory Committee, I have had no opportunity to question or engage in any meaningful way. At a stage in the pandemic when I can eat in a restaurant, work out in a gym, go to a Warriors game or attend the Symphony, it is inexcusable that UCSF continues to hide behind online meetings where they control every aspect of the presentation. They should not be allowed to proceed any further with this EIR without returning to legitimate in-person community dialogue. 10
7. **Space Ceiling** - 1976 REGENTS' RESOLUTION states "The total structures within the campus boundaries shall not exceed 3.55 million gross square feet (not including space committed to residential use on Third, Fourth, Fifth and Parnassus Avenues and Kirkham and Irving Streets) and this limit shall be permanent." (source: 1976 Regents' Resolution) This is a permanent, 11

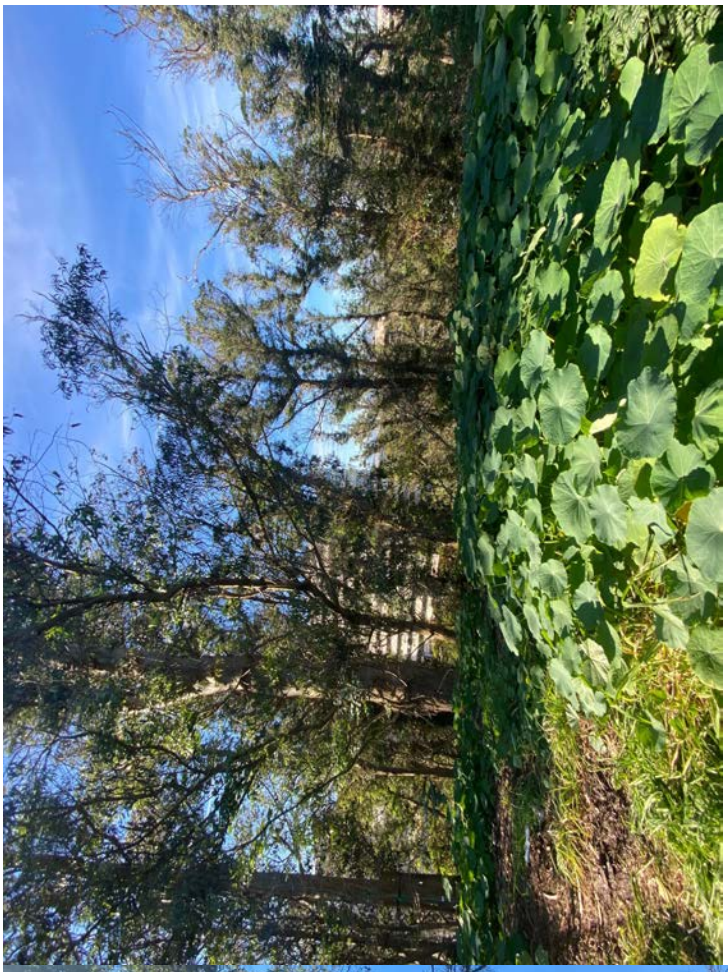
binding promise from UCSF that has shaped over four decades of University development. The Space Cap limitation on the Parnassus site has been used by UCSF to secure funding for major capital projects and to justify massive real estate transactions, including the building of a new campus at Mission Bay. It is inexplicable that UCSF is trying to claim that this permanent limitation is now moot.

11 cont.

As a neighbor, UCSF Medical School alumna, patient, donor, and concerned citizen of San Francisco, I am disgusted with the way UCSF has steamrolled this project through without any concern for the health and safety of the surrounding community, the massive impact on city infrastructure, or the permanent space ceiling agreement.

12

Thank you,
Lisa Kessler, MS, MD



Responses to Comments from Lisa Kessler, MS, MD

I-Kessler-1 The commenter asserts that after decades of mutual cooperation and respect, UCSF has demonstrated that the health and safety of the residents who live adjacent to the campus site are no longer relevant to them. This comment does not address the adequacy of the Draft EIR; however, please see responses to specific issues raised in responses to Comments I-Kessler-3 through I-Kessler-11 below.

I-Kessler-2 The commenter asserts the NHPH Draft EIR is filled with inadequate data, vague assumptions, and handwaving, excuses, and empty promises. The commenter adds that UCSF must be forced to take into account for significant environmental impacts that the NHPH would have on the neighborhood, the Reserve, the larger community and the city of San Francisco. As discussed in **Master Response 2: General Comments on EIR and Environmental Topics**, due to lack of specificity in the comment, no direct response is possible. However, please see the responses to comments below that address those specific issues raised by the commenter.

I-Kessler-3 This comment expresses concern that the mitigation measures for addressing air quality health risk impacts are inadequate and requests further support for the mitigation measures reducing the impact to less than significant.

The assessment of potential health hazards related to construction of the NHPH is addressed on pages 4.2-30 through 4.2-34 of the NHPH Draft EIR. Table 4.2-9 presents the unmitigated health risk assuming the state-wide aggregate of construction equipment. Table 4.2-10 presents the resultant health risk assuming that the majority of construction equipment is equipped with U.S. EPA Tier 4 final engines. As can be seen from these tables, the health risks decline appreciably with the use of newer construction equipment.

Prior to 1994, there were no standards (Tier 0) to limit the amount of emissions from off-road equipment. In 1994, the EPA established emission standards for hydrocarbons, nitrogen oxides, carbon monoxide, and particulate matter to regulate new pieces of off-road equipment. These emission standards came to be known as Tier 1. Since that time, more stringent Tier 2, Tier 3, and Tier 4 (interim and final) standards were adopted by the EPA, as well as CARB. Each adopted emission standard was phased in over time. New engines built in 2015 across all horsepower sizes have to meet Tier 4 final emission standards. In other words, new manufactured engines cannot exceed the emissions established for Tier 4 Final. CARB data indicate that Tier 4 engines reduce particulate matter emissions by more than 90 percent compared to Tier 1 engines. This substantial reduction contributes to the reduction in diesel particulate matter (DPM) and associated reduction in health risks indicated in these tables. Appendix AIR of the NHPH Draft EIR provides further detail on the calculation of health risks from construction of the NHPH.

I-Kessler-4 The commenter states that they would like to see an independent review of the NHPH Draft EIR's assessment of health risk impacts and mitigation measures.

The analysis of air quality impacts and health risks provided in the NHPH Draft EIR was prepared by UCSF's environmental consultant technical specialists who are professionals in the field of environmental impact analysis. The analysis in the NHPH Draft EIR was made available for review and comment by responsible and interested agencies, organizations and the public. Specific concerns or questions about the analysis by these parties, including those raised in this comment letter, are addressed in this Final EIR.

I-Kessler-5 This comment requests an assessment of the pediatric impacts from project emissions of nitrogen oxide, ozone, PM_{10}, $PM_{2.5}$ and sulfur dioxide.

The NHPH Draft EIR considers the health impacts of emissions of diesel particulate Matter (DPM) and $PM_{2.5}$ on pages 4.2-20 through 4.2-34 for construction-related emissions and pages 4.2-34 through 4.2-36 for operational emissions of the NHPH. These analyses were conducted using the latest guidance of the BAAQMD and the state Office of Environmental Health Hazard Assessment. These analyses consider residential, day care and school receptors and, consistent with OEHHA guidance.

With respect to emissions of DPM, as discussed in Appendix AIR of the NHPH Draft EIR, the analysis was prepared in accordance with OEHHA *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments.* the last step was accomplished by applying the highest estimated concentrations of TAC at the receptors analyzed to the established cancer potency factors and acceptable reference concentrations for non-cancer health effects. Increased cancer risks were calculated using the modeled TAC concentrations and OEHHA-recommended methodologies for both a child exposure (starting at 3rd trimester) as well as daycare and school exposure. The cancer risk calculations were based on applying the OEHHA-recommended age sensitivity factors and breathing rates, as well as fraction of time at home and an exposure duration of 30 years. Age-sensitivity factors reflect the greater sensitivity of infants and small children to cancer causing air pollutants.

The NHPH Draft EIR also includes a localized analysis of $PM_{2.5}$ concentrations from construction and compares predicted resultant concentrations to the BAAQMD annual average threshold of 0.3 micrograms per cubic meter. This concentration is the U.S. EPA staff-proposed significant impact level for $PM_{2.5}$ in order to permit to emit a regulated pollutant in an area that meets the National Ambient Air Quality Standard (NAAQS). The NAAQS were developed by EPA to represent the maximum amount of a pollutant averaged over a specified period of time that can be present in outdoor air without harming public health, and thus, it defines clean air. As indicated by Table 4.2-9 of the NHPH Draft EIR, resultant

$PM_{2.5}$ concentrations from construction would be 0.06 micrograms per cubic meter and, thus, would not represent a potential health impact to people, including children.

With respect to construction-related emissions of nitrogen oxides (NOx) and ozone, NOx is considered with respect to its potential to form ozone. As discussed on page 4.2-2 of the NHPH Draft EIR, ozone is a regional pollutant and generally not directly emitted to the atmosphere but, rather, produced in the atmosphere through a complex series of photochemical reactions involving reactive organic gases. Therefore, the analysis of NOx in an air quality analysis is with respect to its potential to eventually cause ozone formation on a regional scale and not as a localized health impact. As shown in Table 4.2-7 of the NHPH Draft EIR, NOx emissions from construction would be less than 27 pounds per day which is well less than the BAAQMD threshold of 54 pounds per day which represents a cumulatively considerable contribution to ozone formation and, therefore, a less than significant impact.

With respect to localized emissions of sulfur dioxide (SO_2), as discussed on page 4.2-5 of the NHPH Draft EIR, pollutant trends suggest that the SFBAAB currently meets and will continue to meet the State standard for SO_2 for the foreseeable future. SO_2 emissions from construction activities are minimal and BAAQMD guidance does not suggest that such emission be assessed in an analysis of construction-related air emissions.

I-Kessler-6 This comment expresses concern that the analysis of noise impacts applies the assumption that adjacent receptors would have their windows closed and that construction-related and operational noise impacts of the NHPH are not adequately mitigated.

As stated on page 4.11-16 of the NHPH Draft EIR, Section 2909(d) of the City of San Francisco Police Code provides an interior noise limit for noise generated by mechanical equipment, stating that noise levels from mechanical sources may not exceed 45 dB(A) between the hours of 10:00 PM and 7:00 AM or 55 dB(A) between the hours of 7:00 AM and 10:00 PM with windows open except where building ventilation is achieved through mechanical systems that allow windows to remain closed. In the assessment of UCSF's voluntary compliance with this Code requirement, the analysis assumed that the receptors to the east of the project site were single family residences that do not have mechanical systems that allow windows to remain closed. This assumption is specifically stated on page 4.11-23 of the NHPH Draft EIR.

The NHPH Draft EIR identified construction noise as a significant and unavoidable impact with all feasible mitigation measures. Suggestions for additional specific mitigation measures are considered in this Final EIR as part of the response to comment process.

I-Kessler-7 This comment is concerned that the removal of vegetation on the hillside east of the NHPH site may require a reexamination of the assessment of air quality and noise impacts from the NHPH.

With respect to the assessment of air quality impacts of the NHPH, dispersion modeling conducted for the assessment of health risk impacts considered local topography and structures. It conservatively did not consider any additional absorption or other reduction of air pollutant dispersion associated with vegetation. The Risk Assessment Guidelines prepared by the State Office of Environmental Health Hazard Assessment do not provide for consideration of intervening vegetation not does the dispersion model (AERMOD) provide for such a consideration.

With respect to the analysis of noise impacts of the NHPH, all modeling of noise levels conservatively did not consider any attenuation associated with vegetation. Caltrans reports that research on the shielding effectiveness of such vegetation concluded that the mean noise reduction was less than 1 dBA, and ranged from 0 dBA to less than 3 dBA.[4] The research further concluded that such vegetative barriers were not an effective measure to reduce noise on a routine basis.

I-Kessler-8 The commenter asserts that UCSF cannot solve the problem of the proposed workforce population increase with shuttle buses and electric vehicles. The commenter is referred to Section 4.13, *Transportation,* pages 4.13-9 to 4.13-10 in the NHPH Draft EIR, which describes UCSF's existing shuttle system that serves the Parnassus Heights campus site; and pages 4.13-12 to 4.13-13, under Transportation Demand Plan, which describes that electric vehicle charging stations and priority parking spaces are available for Green Vehicles. In addition, NHPH Draft EIR Impact TRANS-1 determined that the NHPH would not conflict with applicable programs, plans, ordinances or policies addressing the circulation system, including for transit, roadway, bicycle and pedestrian facilities.

The commenter also asserts that UCSF should not be exempt from the requirement to account for increases in workers/workforce with respect to demand on transportation and availability of affordable housing. With respect to worker demand for transportation, see paragraph above, all potential impacts of operation of the NHPH on transportation under CEQA, including with the consistency of the NHPH with applicable transportation program, plans and policies (Impact TRANS-1, pages 4.13-44 to 4.13-46); and with the NHPH impacts on vehicles miles travelled (Impact TRANS-2, pages 4.13-47 to 4.13-50), would be less than significant.

With respect to NHPH worker/workforce impacts on housing, the NHPH Draft EIR, Section 4.12, *Population and Housing,* under Approach to Analysis, page 4.12-6, defines "substantial unplanned population growth" resulting from

4 Caltrans, 2013. *Technical Noise Supplement to the Traffic Noise Analysis Protocol*, September 2013.

implementation of the NHPH as "an increase in population or employment that is inconsistent with growth anticipated in adopted planning documents." The NHPH Draft EIR analyzes existing population and employment in the five-county study area, establishing an appropriate baseline, and then analyzes the projected growth in population and employment associated with the CPHP.

Impact POP-1 in the NHPH Draft EIR finds that population growth under the NHPH would not be substantial in comparison to growth that is projected and planned for San Francisco and the four study area counties in *Plan Bay Area 2040* and the local General Plans for the study area communities. It should also be noted that the estimated NHPH growth reported in Section 4.12 are likely overstated, as some of the employment growth associated with the NHPH was previously included in the 2014 LRDP and potentially already accounted for in *Plan Bay Area 2040*. The residential units planned on the campus site under the CPHP will provide more on-campus housing to employees near their workplaces, including those that work in UCSF hospitals at the campus site. In addition, as part of the Memorandum of Understanding (MOU) between UCSF and the City of San Francisco, UCSF has committed to providing additional housing beyond that called for in the CPHP. In accordance with the MOU, UCSF will deliver a total of 1,263 net new units in San Francisco, half delivered by 2030, with the remaining half divided equally by 2040 and 2050. This includes the 762 net new housing units at Parnassus Heights analyzed in the CPHP EIR. In addition, UCSF has agreed under the MOU to explore and develop additional housing in other parts of the City to accommodate UCSF students and employees, including those that study and/or work at Parnassus Heights. These would include 71 units of faculty housing at 2130 Post Street, and about 230 units in the Civic Center in collaboration with UC Hastings; both projects completed CEQA environmental review. Also, as part of the MOU, UCSF committed to facilitating the delivery of 200 additional units in the future in the City that could simply be met by an in lieu payment to the City and for which the City would complete CEQA review of such units. As such, the proposed NHPH impact related to population and housing would be less than significant.

I-Kessler-9 The commenter asserts that similar to other businesses in San Francisco, UCSF must be subject to the City's requirements that address the effect of the project-related population increase on transportation and affordable housing.

Pursuant to the University of California's constitutional autonomy, development and uses on property under the control of the University that are in furtherance of the University's educational purposes are not subject to local land use regulation, including any requirements imposed by the City on businesses located in San Francisco. However, in compliance with CEQA, the impacts of the proposed NHPH on transportation and housing are fully evaluated in the NHPH Draft EIR Section 4.13, *Transportation* and Section 4.12, *Population and Housing*, respectively.

To ensure that development at the Parnassus Heights campus site under the CPHP aligns with City's priorities for housing, transportation and other topics, and sufficiently addresses the needs created by the proposed growth, UCSF and the City of San Francisco entered into a Memorandum of Understanding (MOU) on January 22, 2021. As discussed in response to Comment I-Kessler-8 above, as part of a MOU, UCSF agreed to deliver a total of 1,263 net new units in San Francisco by 2050 (inclusive of the 762 units in the CPHP), half delivered by 2030, with the remaining half divided equally by 2040 and 2050. This would double UCSF's current housing portfolio citywide. Transportation improvements agreed to under the MOU include an upgrade the UCSF Parnassus transit stop; contributing funds to increase the capacity and frequency of the N-Judah and/or other Muni lines; and identifying a bicycle route between Golden Gate Park and the campus site.

I-Kessler-10 The commenter expresses concern over the community engagement that has occurred over the last two years. Please refer to **Master Response 3: Community Outreach**.

I-Kessler-11 The commenter quotes an excerpt the 1976 Regents' Resolution, and indicates her belief that this is a permanent binding promise from UCSF that has shaped University development over four decades; and then asserts that it is inexplicable that UCSF is trying to claim that this permanent limitation is now moot.

While the proposed NHPH would result in an increase in square footage and population at the Parnassus Heights campus site, the 2014 LRDP as amended in January 2021 revised the space program, updated the projected population, and revised the Regents' Resolution to increase the space ceiling at the campus site. As such, the NHPH would be within the size and population parameters of the 2014 LRDP, as amended.

This comment does not address the adequacy of the NHPH Draft EIR.

I-Kessler-12 The commenter expresses concern related to UCSF processing of the NHPH project without concern for the health and safety of the surrounding communities, the impact on city infrastructure; or her belief of a space ceiling agreement. With respect to impacts of the NHPH on health and safety, please see NHPH Draft EIR Section 4.2, *Air Quality;* Section 4.6, *Geology and Soils*; and Section 4.8, *Hazards and Hazardous Materials;* and 4.9, *Hydrology and Water Quality*. With respect to impacts of the NHPH on city infrastructure, please see NHPH Draft EIR Section 4.13, *Transportation;* and Section 4.4, *Utilities and Service Systems*. With respect to the space ceiling, please see response to Comment I-Kessler-11, above. Please note that the NHPH Draft EIR addresses all potential environmental impacts of the proposed NHPH and mitigates significant impacts to the extent feasible.

TO: Diane Wong, Environmental Coordinator, UCSF Campus Planning

CC: Francesca Vega, Vice Chancellor, Community and Government Relations,
Brian Newman, Senior Associate Vice Chancellor, Real Estate

FROM: Susan Maerki, UCSF CAG, Parnassus Campus and Member of the Future of UCSF Parnassus Heights Advisory Committees

IN RE: Comments on UCSF New Hospital at Parnassus Heights, Draft Environmental Impact Report, December 2021

DATE: February 13, 2022

VIA EMAIL: EIR@planning.ucsf.edu

General Comments

While it is impossible to provide precise details and estimates of impacts of the Comprehensive Parnassus Heights Plan (CPHP) and the New Hospital at Parnassus Heights (NHPH), I am disappointed that the Draft NHPH EIR does not fully address numerous issues raised by the community and the advisory groups that date back to the development of the CPHP.

The new hospital and the other projects planned for the first ten years represent a front-loaded impact of the CPHP. The NHPH EIR must incorporate more detailed information, broaden the discussion of environmental effects, and increase UCSF commitments and touchpoints to the surrounding neighborhoods.

Because of this, I believe the DRAFT NHPH EIR is not fully responsive to issues that have been raised, has insufficient or weak mitigation proposals in some areas of impact, does not sufficiently address the cumulative impact of multiple construction sites during the initial 10-year period, and still lacks sufficient analysis of alternative proposals. For these reasons, I believe the DRAFT NHPH EIR requires further revision before it is submitted to the Regents.

1

The DRAFT NHPH EIR is not fully responsive to issues that have previously been raised.

As one example, please refer to the comment letter I submitted in response to the Notice of Preparation of Environmental Impact Report and Initial Study regarding UCSF New Hospital at Parnassus Heights, dated August 26, 2021.

Specific omissions/insufficient responses include:

- Request to increase UCSF commitment to a greater number of project specific reviews or EIRs over the course of the 30-year CPHP. 2
- Request to increase UCSF frequency and scope of project planning updates and assess cumulative impacts over the course of the CPHP beyond currently scheduled Project Planning Updates. 3
- A full project timeline, including demolitions and construction of other facilities expected concurrent with the construction period for the NHPH. 4
- Discussion of how the evolving experience with the COVID pandemic has affected planning for the size, layout, and staffing for the NHPH and the renovations at Long and Moffitt. 5
- Parnassus Avenue pedestrian, vehicle, public transportation, and delivery/loading circulation, both during and following NHPH construction. The cumulative impact discussion must include consideration of the proposed RAB construction on the west end of campus during the same 10-year time period. 6
- More aggressive Transportation Demand Management (TDM) proposals to substantially increase faculty, staff and student use of public transit and reduce single car trips to campus. 7
- More analysis of the request to lower the height of NHPH, including placing floors below grade. 8

Selected Issues that require fuller discussion and analysis in the UCSF NHPH EIR

1. **Provide a more comprehensive construction timeline and expand analysis of cumulative impact over the 10-year period.** 9

I appreciate the effort to estimate impacts in some areas, such as transportation and energy use during the 2020-2030 period separately from the impact by the 2050 endpoint of the CHPH, but the analysis is insufficient.

The DRAFT NHPH EIR appropriately attempts to isolate the direct impacts of the NHPH development, but does not reference the context of the NHPH within the CPHP. The Draft NHPH EIR is woefully inadequate in discussing cumulative impacts of UCSF planned

development over that time period. The proposed mitigation efforts are likely insufficient when such cumulative impacts are incorporated. 9 cont.

- The timeline does not include relocation of faculty, staff and services from Langley Porter Psychiatric Institute (LPPI) to the Mount Zion campus and demolition of those buildings in preparation for construction of the USCF NHPH. 10
- There is no mention of long promised demolition of buildings in the Surge and Woods parking lots, although they may be used for staging during NHPH construction. 11
- The cumulative analysis does not include demolition of other buildings, particularly UC Hall, that are planned during the same time period. 12
- There is NO acknowledgement that the timing of construction for the NHPH overlaps the planned construction of a new Research and Academic Building (RAB) at the west end of Parnassus and improvements to the Irving Street (N Judah) entrance that will affect Millberry Union, also on Parnassus Avenue. 13
- The Draft EIR does not adequately assess the cumulative effect of three overlapping major construction projects in a five-block length of Parnassus Avenue, from Hillway/Medical Center Way to Fourth Avenue. 14

The overlapping construction schedule affects numerous aspects the Draft NHPH EIR, at minimum, sections on Hazards and Hazardous Materials, Noise and Vibration, Traffic Circulation and Transportation – including additional construction vehicles. The cumulative impact of these projects must be incorporated into a FINAL NHPH EIR and further mitigation efforts are necessary. 15

2. The Transportation Demand Management (TDM) plan

The TDM appears insufficient to shift a significant proportion of faculty, staff and student travel to the campus onto public transportation and out of single use vehicles. While the analysis may be accurate in projecting continuing and future trends, such as use of Taxi/Uber/Lyft, and recognizes there will be reduced UCSF off street parking by 2050, it does not include aggressive new programs or mitigation efforts beyond what is currently in place, such as shuttles and car share. 16

Other than a "pilot" type program of MUNI passes for UCSF students, and to-be-developed enhancements to the N Judah line as outlined in the Memorandum of Understanding with the City and County of San Francisco, there is limited direct effort to encourage increased use of public transportation, or to assess other alternatives.

Further analysis should be provided for:

- Impact of COVID on hospital staffing and use of telehealth by hospital staff who may not have direct clinical care responsibilities. 17

I recognize that most of the new faculty and staff positions will be in-person to provide direct care, but there is no nuanced discussion of the impact of COVID on the number of employees or how expanded use of telehealth might impact the count of daily trips. 17 cont.

- Increased support and subsidies for faculty, staff and students to use public transportation.

  For example, as part of its agreement with the City of Palo Alto in 2011, Stanford Hospital agreed to purchase annual CalTrain Go Passes for all existing and new employees who work more than 20 hours per week for a period of approximately 50 years, the expected functional lifespan of their new hospital.

  Another alternative is to provide a transportation subsidy benefit on a sliding scale, using the well-established Univ of California model of greater contribution towards monthly health insurance premium for employees with lower income. A relatively small subsidy/voucher, in conjunction with improved outreach to staff to sign up for the Federal Transit Subsidy Benefit Program and the San Francisco or other local government transit fee reduction programs (such as the SF Low Income Transit Lifeline fares), may encourage a more significant increase in use of public transit to the campus. 18

- Improvements to support improved bicycle travel lanes and on-campus bicycle storage.

  This is not addressed. 19

- Improvements to public transportation for bus lines traveling along Parnassus Avenue. 20

As part of the request to install a new traffic light at Hillway and Parnassus, UCSF should consider support for improved bus stops, including shelters, seating, and contributions towards Next Bus/arrival signage. This could include contribution towards installation of transit preferential communication with traffic lights, similar to equipment that has been installed for the N Judah from Irving and Fourth Ave to the intersection of Ninth Ave and Judah. 21

3. Further analysis of alternative hospital size and design options, including 6.4.4., Shorter New Hospital with Additional Basement Levels.

I object to the quick dismissal and no further analysis of an option to reduce the height of the new hospital by placing more services below grade. I find the arguments against consideration, while they have some merit, to be somewhat self-serving and disingenuous, plus uncreative. 22

Comments on specific arguments against consideration of additional basement levels:

- Services appropriate for windowless areas/Access to natural light

Other hospitals, including Chan-Zuckerberg San Francisco General, have services below grade and in basement levels. Based on ZSFGH Institutional Master Plan Update Revision dated June 2015, basement level services in the new hospital include Perioperating/Gastro-Intestinal, Clinical laboratory, Cardiology/Radiology/Auxiliary Support and Plant Services. It is also the case that a number of current UCSF Parnassus clinical services have been or are housed in windowless spaces, including the gastroenterology colonoscopy suites that were in the basement area of Clinical Sciences and Imaging Services off the Irving Street entrance under the garage. I am sure there are other windowless clinical service locations on the campus.

There are probably design solutions that would permit light to reach levels below grade. The hospital design already includes floor setbacks and projections. The ground floor and street entrance could be designed to provide lightwells that allow sunshine to reach lower basement levels that have a smaller floor plan than the street entrance level.

22 cont.

- Additional excavation/disrupt construction schedule/cost

These comments have some merit, but must be evaluated in the context of the CPHP and actions and decisions by the University to date and are not sufficient to dismiss the alternative without additional analysis.

23

- NHPH construction will have to excavate below the planned basement level and below current Parnassus Avenue Street infrastructure to build the proposed connecting underground tunnel. The Draft NHPH EIR provides little discussion of how that portion of construction will occur, but additional below ground areas would be considered and expansion of already planned excavation.
- Although the SB-1953 seismic deadline is December 31, 2030, that may not be a "hard" stop. The SB-1953 deadline has been extended multiple times (from 2008, to 2013, 2020 and 2030 if hospitals met certain requirements). COVID has put a financial strain on many hospitals and it is likely the California Hospital Association will lobby for additional flexibility, including further extensions. In this context, a six-month delay is small and not sufficient to discard alternative.

24

- Although excavating additional basement levels will add to costs and require additional structural changes, the cost increases (estimated at $8-9 million per month or $48 - $54 million for 6 months) is relatively small compared to the estimated cost of the NHPH, renovations to Long and Moffitt, and the entire CPHP.

25

- UCSF reversed itself in the CPHP with the decision to demolish UC Hall and build a new RAB. I suspect the required excavation for RAB is many times greater than what would be required to excavate for additional basement levels for the NHPH. 26
- Lowering the height of the hospital by placing more services in basement levels would allow the hospital design to maintain the desired square footage and bed size, but reduce long term adverse impacts identified in the Draft NHPH EIR, such as shadow and wind effects. 27

Thank you for considering these remarks. I look forwards to the Revised Draft EIR for the NHPH.

Responses to Comments from Susan Maerki

I-Maerki-1 The commenter expresses disappointment that the NHPH Draft EIR does not fully address issues raised by the community and the advisory groups that date back to the development of the CPHP. As discussed in **Master Response 2: General Comments on EIR and Environmental Topics**, due to lack of specificity in the comment, no direct response is possible. Please also see **Master Response 3: Community Outreach**, as it relates the community outreach that has been conducted by UCSF to date on the NHPH project.

I-Maerki-2 The commenter requests an increase in UCSF commitment to a greater number of project-specific reviews or EIRs over the course of the 30-year CPHP. This comment does not address the adequacy of the NHPH Draft EIR; consequently, as explained in **Master Response 1: Non-CEQA Comments**, no response is required. However, please also see NHPH Draft EIR Chapter 1, Introduction for a discussion of the relationship of the NHPH to the CPHP and 2014 LRDP, and a description of the environmental review process for the NHPH EIR.

I-Maerki-3 The commenter requests an increase in UCSF frequency and scope of project planning updates and assess cumulative impacts over the course of the CPHP beyond currently scheduled Project Planning Updates.

With respect to project planning updates, please see **Master Response 3: Community Outreach**, as it relates the community outreach conducted by UCSF on the NHPH project. Community outreach on the NHPH and other projects will continue. With respect to approach to assessment of cumulative impacts in relation to the proposed NHPH, please see Section 4.0, *Approach to Environmental Analysis*, on pages 4.0-7 to 4.0-9 in the NHPH Draft EIR. The NHPH Draft EIR cumulative impact analysis in each of the impact topics addressed all potential impacts of the NHPH, in combination with other cumulative development, including that of the CPHP, as applicable. This analysis may be updated in the future for specific project approvals, as required by CEQA.

I-Maerki-4 The commenter requests a project timeline, including demolition and construction of other facilities expected concurrent with the proposed construction period for the NHPH.

NHPH Draft EIR Section 4.0, *Approach to Environmental Analysis*, identified the cumulative projects in the local geographic area considered in the cumulative impact analysis. The table, below, consolidates the current timeline for those on-campus cumulative construction projects that would occur concurrent with that of the NHPH, and thus, have potential to combine for cumulative effects. This includes demolition for projects previously approved under the 2014 LRDP that have not yet been implemented; demolition and new construction for and CPHP

projects, none of which have yet been implemented; and ongoing management activities under the UCSF Mount Sutro Open Space Reserve Vegetation Management Plan.

ON-CAMPUS CUMULATIVE CONSTRUCTION CONCURRENT WITH NHPH CONSTRUCTION

Cumulative Project	Timeline
CPHP - Irving Street Arrival	2025 to 2026
CPHP - Research and Academic Building (includes demolition of UC Hall and School of Nursing)	UC Hall interior abatement/demolition: 2022 UC Hall hard demolition: late 2022 through mid-2023 RAB construction: mid-2023 through mid-2026 School of Nursing hard demolition: 2026-2027 (following RAB completion)
CPHP - Initial phase of Aldea Housing Densification	From 2028 to end of 2030
CPHP - Renovation of Existing Buildings	Ongoing
CPHP - Parnassus Avenue Streetscape	Concurrent with adjacent projects within campus site
2014 LRDP – Demolition of LPPI and supporting structures	Interior abatement/demolition of space vacated by the LPPI outpatient clinics: summer 2022 Remaining interior abatement and demolition of buildings: summer 2023 Hard demolition of LPPI and supporting structures: fall 2023
2014 LRDP – Demolition of Woods and Surge Buildings	Fall 2022 and Spring 2023
2014 LRDP – Demolition of Proctor Building	Not defined yet
UCSF Mount Sutro Open Space Reserve Vegetation Management Plan	Ongoing

The NHPH Draft EIR analyzed a cumulative scenario using construction timelines for the cumulative projects consistent with those presented in the CPHP Final EIR. The table above reflects updated timelines for the planned demolition of LPPI, construction of the Irving Street Arrival, and demolition and new construction associated with the RAB, in which the timelines for these cumulative projects are proposed to be pushed back. It should be noted, however, that these specific modifications to construction timelines would not affect any conclusions reached in the NHPH Draft EIR regarding the level of significance of cumulative impacts, or require any changes to mitigation measures identified in the NHPH Draft EIR to reduce cumulative effects, as described below:

- With respect to construction-generated criteria air pollutants, Table 4.2-7 of the NHPH Draft EIR presented annual construction emissions generated for the NHPH by year of activity. While alterations of the schedules for certain cumulative projects will change the years of simultaneous construction with NHPH, for the purposes of criteria pollutant assessment, the BAAQMD thresholds applied in the construction emissions analysis represent a cumulatively considerable contribution of the project. Therefore, as stated on

page 4.2-41 of the NHPH Draft EIR, because the project-level emissions for each year would be below BAAQMD thresholds its cumulative impact would be less than significant with mitigation, regardless of the contributions, per the methodology cited in BAAQMD's Air Quality CEQA Guidelines.

- With respect to construction-generated fugitive dust, NHPH Mitigation Measure AIR-1 is identified to reduce this impact to a less than significant level. Because the other cumulative UCSF projects also have required mitigation measures to address fugitive dust emissions, the adjusted schedule of certain cumulative projects would not result in a different impact conclusion or the need an intensified dust control measures, which already meet the standards specified in the BAAQMD's Air Quality CEQA Guidelines.

- With respect to potential construction health risk impacts, although the timelines may result in a shift in the temporal occurrence of the more intensive activities that result in DPM emissions, this shift would not affect the overall associated cancer risk contributions that are summed and discussed on pages 4.4-42 through 4.2-44 of the NHPH Draft EIR.

- With respect to cumulative construction noise, the analysis on pages 4.12-33 through 4.12-34 of the NHPH Draft EIR assumes that construction of the Irving Street Arrival and the NHPH would occur simultaneously, which is still the case under the revised schedule. Construction of the RAB would be sufficiently distant to avoid cumulative contributions to receptors affected by the NHPH and Irving Street Arrival construction. Consequently, with the revised schedule for Initial Phase Projects planned under the CPHP, the NHPH would still have a significant and unavoidable cumulative construction noise impact as was identified in the NHPH Draft EIR and implementation of NHPH Mitigation Measures NOI-1a and NOI-1b, and NHPH Mitigation Measure TRANS-5: Construction Coordination and Monitoring Measures, would still apply.

Beyond these on-campus cumulative projects, the only notable off-campus cumulative project in the NHPH site vicinity identified in the NHPH Draft EIR with the potential to contribute cumulative impacts is at 350 Parnassus Avenue building. Originally, UCSF was in negotiations continue to lease the 350 Parnassus Avenue property, and seismically upgrade the building in 2022 to meet UC standards per the UC Seismic Safety Policy. However, UCSF has since decided instead to vacate this building, and consequently, would not seismically upgrade the building pursuant to UC standards. It is UCSF's understanding that the property owner will carry out minimal seismic work in the building, along with interior renovations on building floors as needed as new tenants are brought on. Consequently, there are no aspects of changes related this cumulative project that would affect any prior conclusions reached regarding cumulative impacts in the NHPH Draft EIR.

I-Maerki-5 The commenter requests a discussion of how the evolving experience with the COVID pandemic has affected planning for the site, layout, and staffing for the NHPH and the renovations at Long and Moffitt Hospitals.

The planning for the New Hospital and renovation of Long and Moffitt Hospital are being conducted in consideration of the COVID pandemic. As explained in the NHPH Draft EIR Chapter 3, *Project Description*, Subsection 3.5 *Project Need*, learning from the current COVID-19 pandemic, it is extremely critical for clinical facilities to be flexible and have the ability to increase inpatient capacity to accommodate additional clinical needs during these times, rather than reducing or canceling non-essential surgeries in order to reduce patient census. Based on observed shortages in the availability of beds, especially intensive care unit and acute care beds; an analysis of demographic trends that indicate that the Medical Center will need to serve not only a larger population but also a population that includes more elderly patients; an analysis of the demand/need for private rooms; and an analysis of trends in health care which show an increased need for tertiary and quaternary health care, UCSF Health determined that the proposed hospital would need to provide inpatient beds, along with other necessary facilities that include additional operating rooms, additional emergency room bays and spaces, additional interventional labs, and ambulance bays. The proposed renovation of Moffitt and Long Hospitals would provide inpatient beds to augment those proposed at the New Hospital, and facilitate the inpatient clinical and support program needs for the increased patient capacity at Parnassus Heights.

I-Maerki-6 to -7 These comments express concerns that the NHPH Draft EIR inadequately analyzes multimodal transportation activity on Parnassus Avenue, insufficiently accounts for cumulative construction impacts, fails to propose aggressive transportation demand management (TDM) strategies and inadequately assesses impacts on transit.

CEQA provides for lead agencies, such as the University of California (UC), to adopt their own thresholds of significance and to evaluate the significance of a project's impact based on substantial evidence. UC's significance criteria for the NHPH are based on Appendix G of the State CEQA Guidelines. Under UC's significance thresholds, the NHPH would have a significant effect on the environment if the NHPH would:

- Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities
- Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)
- Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)
- Result in inadequate emergency access

- Adversely affect travel conditions along sidewalks and roadways serving the project site due to construction activities

The transportation analysis presented in the NHPH Draft EIR is complete and adequate per these requirements.

The first four of these criteria are based on those set forth in *State CEQA Guidelines* Appendix G, and are presented in the NHPH Draft EIR on page 4.13-27 to -57. With respect to analysis of potential impacts relative to each of these criteria, the NHPH Draft EIR discusses relevant programs, plans, ordinances and policies on pages 4.13-23 to 26. The NHPH's compliance with each of these programs, plans, ordinances and policies is discussed in Impact TRANS-1 on pages 4.13-44 to 4.13-46. While this section discusses local plans and policies, including the City of San Francisco's Transit First Policy and Better Streets Plan, the University of California is constitutionally exempt from local land use control and other local plans, policies, and ordinances whenever using property under its control in furtherance of its educational mission. City plans, ordinances and policies are not applicable to UCSF; however, certain policies are discussed in the NHPH Draft EIR as a means of presenting information and analysis that may be of value to the City in its planning processes.

The NHPH Draft EIR discusses the project's consistency with CEQA Guidelines Section 15064.3, subdivision (b) in Impact TRANS-2 on pages 4.13-47 to 4.13-50. The NHPH Draft EIR assesses VMT impacts based on the recommendations presented in the Office of Planning and Research's Technical Advisory on Evaluating Transportation Impacts in CEQA, which states that a project would "generate substantial additional VMT" if it would exceed regional household VMT per capita minus 15 percent or regional work-based VMT per employee minus 15 percent. This threshold is based on statewide air quality and greenhouse gas emissions targets and is therefore reasonable for assessing project VMT. As presented in Tables 4.13-20 on page 4.13-48, the Parnassus Heights campus site with the proposed NHPH would generate VMT at rates substantially below the regional averages. Therefore, the NHPH Draft EIR appropriately finds the impact related to VMT to be less than significant.

The NHPH Draft EIR discusses the analysis and finding that the project would not substantially increase hazards due to a design feature or result in inadequate emergency access on pages 4.13-50 to 4.13-52 and pages 4.13-52 to 4.13-53 of the NHPH Draft EIR, respectively.

The cumulative condition for the NHPH includes all projects to be implemented pursuant to the CPHP, including the RAB. As noted on p. 4.13-57 of the NHPH Draft EIR, all CPHP projects would be required to complete construction management plans to coordinate and consolidate the construction activities throughout the Parnassus Heights campus site, including arranging for an off-site

material staging facility or facilities (NHPH Mitigation Measure TRANS-5: Construction Coordination and Monitoring Measures).

Concerns about the ability of proposed TDM measures to shift significant portions of campus travel out of single-occupancy vehicles (SOVs) or to reduce parking demand are not a comment on the adequacy of the transportation analysis or EIR. The amount of SOV travel was not determined to be an impact under CEQA due to the Project's compliance with the UC Sustainable Practices Policy mode share goals, discussed on page 4.13-44 of the NHPH Draft EIR.

With respect to TDM measures, notwithstanding the finding of less than significance related to this subject, UCSF is subject to CPHP Mitigation Measure AIR-2a and AIR 2-b of the CPHP Final EIR which specify the reduction in average daily vehicle trips that UCSF must achieve at the campus site through a variety of TDM program enhancements such as providing and maintaining secure bicycle parking, new shuttle connections to regional transit, and enhanced patient TDM programs.

With respect to parking, as discussed in Chapter 1, *Introduction*, the NHPH meets the criteria of Statute Section 21099(d), and as such, potential impacts of the NHPH on parking activity was not determined to be an impact under CEQA. Furthermore, impacts on parking are not included in the CEQA Appendix G checklist for transportation. Accordingly, CEQA does not require that a project's effect on parking be analyzed.

The increase in campus population and visitation due to implementation of the NHPH is expected to occur over a 10+ year timeline. The CPHP, of which the NHPH is a part, will occur over a 30-year timeline. UCSF monitors transportation conditions at all campus sites where development is proposed and will continue to monitor vehicle traffic conditions, employee and patient mode split, and shuttle ridership within and surrounding the Parnassus Heights campus site.

Above and beyond the changes due to these mitigation measures, UCSF will continue to monitor conditions and consider new TDM measures, such as the ones suggested in the comments that preceded this response and modify its TDM programs to better address challenges and serve both current and future UCSF populations. Changes to UCSF's TDM offerings could be triggered due to campus travel demand changes because of population changes, staffing levels, the use of telehealth by patients, patient preference changes due to the COVID-19 pandemic, and other such inputs as well as the way in which people travel to the campus, whether by car, transit, bicycle, walk, or other means. Monitoring transportation conditions and revising the TDM program based on evolving conditions is important in order to capture potentially compounding or cross-cutting trends. An example of a compounding trend would be if monthly parking

passes for faculty and staff were discontinued when a new shuttle connection to regional transit was implemented, allowing those with a preference for travel by transit, but concerned with getting a return on their monthly parking pass to travel by transit on most days and pay for a daily parking pass when car travel is required. An example of cross-cutting trends would be if faculty, staff, patients, and visitors come to the Parnassus Heights campus site at a lower rate in the future because of increased telehealth and telecommuting, but this resulting decrease in total car travel to the campus site is offset by an increased preference for SOV car travel to the campus site.

The travel demand analysis presented from p. 4.13-29 to 35 of the NHPH Draft EIR is complete and adequate per UC requirements. UC does not consider effects on transit demand to be a significant impact under CEQA and therefore a public transit plan is not required as part of CEQA. While UCSF does have control over its shuttle service, regularly monitoring the capacity utilization of its routes to best provide service, it has no direct control over Muni's transit service planning. SFMTA makes transit service decisions based on its own data, such as ridership, vehicle and staff availability, and passenger surveys. This allows SFMTA the flexibility and responsiveness to provide the most efficient transit service possible to the city as a whole. The four transit lines that serve the Parnassus Heights campus (6-Haight/Parnassus, 7-Haight/Noriega, 43-Masonic, and N-Judah) are all proposed to see service changes under SFMTA's "Muni Forward" program. These changes are not necessarily to serve the NHPH or any particular project; they are based on SFMTA's general assessment of needs and will be implemented based on the priorities of SFMTA.

That being said, UCSF works closely with SFMTA to assure that the city is informed of changes at the Parnassus Heights campus site. UCSF is also supportive of the use of transit to travel to and from the campus site. As evidence of this coordination and support, UCSF and the City, acting through various departments, including the SFMTA entered into a Memorandum of Understanding (MOU) in January 2021 that acknowledged the interdependent relationship between UCSF and the surrounding transportation system and recognized their shared responsibility to provide a full complement of transportation services to the Campus community. Transportation and mobility elements of the MOU include:

- SFMTA will endeavor to increase the capacity of the N-Judah transit line, inclusive of modifications required to support three-car trains and provide more frequent service.
- UCSF will pay SFMTA a transportation contribution to increase the capacity and the frequency of service of the N-Judah and/or other Muni lines, services, and facilities provided by SFMTA that directly serve Campus community.

- UCSF will upgrade (or pay SFMTA to upgrade) the N-Judah UCSF Parnassus stop platform for three-car trains as an in-kind contribution to improve the pedestrian realm and encourage transit use by making the area more comfortable for people waiting for SFMTA transit service.
- UCSF will implement feasible safety improvements at the intersection of Arguello Boulevard, Carl Street, and Irving Street.
- UCSF will continue to implement the Parnassus streetscape plan as well as:
  - explore additional pick-up and drop-off activities and commercial loading activities related to the CPHP,
  - refresh the plan to include a curb management plan within two years of the EIR certification for the NHPH and share said plan with SFMTA, and
  - evaluate the streetscape plan to consider intersection modifications and traffic control devices at Judah Street – Parnassus Avenue/Fifth Avenue; Parnassus Avenue/Fourth Avenue; Parnassus Avenue/Third Avenue; Parnassus Avenue/Hillway Avenue, as needed to address additional traffic delay and accessibility concerns related to the CPHP.
- UCSF will continue to partner with the City to identify a bicycle route between Golden Gate Park and the Campus.

It should be noted that the obligations contained in the MOU are contingent on UCSF proceeding with the CPHP as contemplated and securing successful entitlement and requisite approvals to implement it.

I-Maerki-8 The commenter states that the NHPH Draft EIR has an insufficient response to the request that the height of NHPH be lowered, including placing floors below grade. The NHPH Draft EIR, Section 6.4.4 explains in detail that one basement level is already included in the proposed New Hospital and programmatically, there are no additional functions that can be placed in basement levels. Further, the excavation of the site to create additional levels below grade would add time and cost to the construction of the project resulting in a delay in the delivery of the needed inpatient beds. Other reasons are also set forth in Section 6.4.4. CEQA requires that an EIR briefly explain why an alternative is not feasible and therefore not carried forth for detailed evaluation. Section 6.4.4 satisfies this CEQA requirement.

I-Maerki-9 The commenter requests a more comprehensive construction timeline and expanded analysis of cumulative impacts over the 10-year period. The NHPH Draft EIR provided a thorough NHPH construction discussion in Subsection 3.7.2 in Chapter 3, *Project Description*, pages 3-46 to 3-49. This included a detailed preliminary timeline of the principal construction components for the New Hospital and its related improvements on page 3-47. This construction timeline, along with a construction equipment and operations list provided by UCSF's construction contractor, served as the basis for determining the

appropriate periods for construction analysis in the NHPH Draft EIR, including which peak NHPH construction impacts would occur.

NHPH Draft EIR Section 4.0, *Approach to Environmental Analysis*, identified the cumulative projects in the local geographic area considered in the cumulative impact analysis. The NHPH project timeline was considered in conjunction with the cumulative project timeline to determine when overlapping effects would be greatest. Please see response to Comment I-Maerki-4 for additional information on the updated cumulative project timelines, and a determination that these modifications would not affect prior conclusions made regarding the significance of cumulative impacts, or those mitigation measures identified to lessen cumulative effects.

As such, the NHPH EIR conservatively addressed both NHPH project and cumulative project impacts.

I-Maerki-10 The commenter suggests that cumulative construction timeline does not include the relocation of faculty, staff and services from LPPI, and the demolition of LPPI. As shown in response to Comment I-Maerki-4, based on the updated cumulative construction schedule, the demolition of LPPI would occur in 2022 to 2023. LPPI outpatient clinics and the Department of Psychiatry will be relocated to the Child, Teen and Family Center and Department of Psychiatry Building at 675 18th Street near the Mission Bay campus site, which is nearing completion. LPPI inpatient and partial hospitalization programs will be relocated to the Mount Zion campus site.

I-Maerki-11 The commenter inquires about the timeline for the demolition of the Surge and Woods buildings. As shown in response to Comment I-Maerki-4, above, the demolition of the Woods and Surge Buildings would occur in Fall 2022 and Spring 2023, respectively.

I-Maerki-12 The commenter asserts that the cumulative analysis does not include demolition of other buildings, particularly UC Hall. The NHPH Draft EIR does consider the demolition of buildings planned under 2014 LRDP and CPHP in the cumulative analysis. As shown in response to Comment I-Maerki-4, the demolition of UC Hall and School of Nursing are part of the RAB project. The hard demolition of UC Hall would occur in late 2022 through mid-2023; and the hard demolition of the School of Nursing would occur in 2026-2027, following completion of the RAB.

I-Maerki-13 The commenter asserts that there is no acknowledgement that the timing of the NHPH overlaps the planned construction of the Irving Street Arrival and RAB projects. As described in NHPH Draft EIR Section 4.0, *Approach to Environmental Analysis*, page 4.0-6, the list of on-campus cumulative projects considered in the NHPH Draft EIR cumulative analysis includes the Irving Street Arrival and RAB projects, and their timelines. See also response to Comment I-

Maerki-4 regarding updated construction timelines of certain cumulative projects.

I-Maerki-14 The commenter asserts that the Draft EIR does not adequately address the cumulative effect of three overlapping major construction projects in a five block length of Parnassus Avenue, from Hillway/Medical Center to Fourth Avenue. It is assumed that the three overlapping major construction projects on Parnassus Avenue the commenter is referring to are the NHPH, the Irving Street Arrival and the RAB. As discussed in response to Comment I-Maerki-13, above, both the Irving Street Arrival and RAB were considered in the NHPH Draft EIR cumulative analysis. For example, please see cumulative Impact C-AIR-2 in Section 4.2, *Air Quality* and cumulative Impact C-NOI-1 in Section 4.11, *Noise and Vibration,* where the NHPH is considered in conjunction with both the Irving Street Arrival and RAB cumulative projects.

I-Maerki-15 The commenter indicates that the overlapping construction schedule affects numerous aspects of the NHPH Draft EIR, including Hazardous Materials, Noise and Vibration, and Traffic and Circulation, including additional construction vehicles.

Please see cumulative Impact C-HAZ-1 in the NHPH Draft EIR Section 4.8, *Hazards and Hazardous Materials*. Impact C-HAZ-1 notes that prior to construction of the New Hospital, as a separate planned project, the LPPI and support buildings would be removed from the NHPH site, and any existing hazardous materials associated with those facilities and soils would be removed pursuant to applicable federal, State and local regulations. Similarly, other existing or planned clinical and/or research facilities at the campus site would be subject to similar applicable regulations and oversight from the University EH&S. As a result of these existing regulatory requirements, the potential hazardous materials and hazard impacts would not combine to become cumulatively considerable. Consequently, the NHPH Draft EIR concludes that the cumulative construction impact related to hazards and hazardous materials would be less than significant.

Cumulative Impact C-NOI-1 in Section 4.11, *Noise and Vibration,* considers construction noise impacts of the NHPH in conjunction with both the Irving Street Arrival and RAB cumulative projects. The NHPH Draft EIR finds that the addition of construction noise from the Irving Street Arrival would likely result in times when cumulative construction noise would exceed 10 dBA over existing ambient levels at some off-site receptors even after implementation of identified mitigation measures identified for that project, and consequently, the cumulative construction noise impact would be significant and unavoidable. Cumulative Impact C-NOI-3, considered cumulative construction vibration impacts. The NHPH Draft EIR described that architectural damage impacts to adjacent buildings are not a concern in the cumulative scenario because the NHPH is

sufficiently distant from cumulative projects so as to not cumulatively combine to result in architectural damage impacts. As such, cumulative vibration impacts of the NHPH would be similarly less than significant with implementation of NHPH Mitigation Measure NOI-3.

Cumulative Impact C-TRANS-1 in Section 4.13, *Transportation*, acknowledges that the construction of the cumulative construction projects will overlap with the construction of the NHPH, however, all UCSF projects at the Parnassus Heights campus site would implement construction management plans pursuant to mitigation measures adopted at the time of project approval. Construction management plans would ensure that construction impacts do not cumulate to result in a significant impact. The NHPH's contribution to the cumulative impact would be rendered not considerable with the implementation of NHPH Mitigation Measure TRANS-5, and the impact would be less than significant.

See also response to Comment I-Maerki-4, above.

I-Maerki-16 The commenter indicates the TDM appears insufficient to shift a significant portion of faculty, staff and student travel to the campus site onto public transportation; and that it does not include aggressive new programs or mitigation efforts, such as shuttles and car share. The commenter adds that there is limited direct effort to encourage increased use of public transportation, or to assess other alternatives. Please see responses to Comments I-Maerki-6 to I-Maerki-7, above.

I-Maerki-17 The commenter asserts that further analysis should be provided for the impact of COVID on hospital staffing and use of telehealth by hospital staff who may not have direct clinical care responsibilities. Please see responses to Comment I-Maerki-5, above.

I-Maerki-18 The commenter asserts that further analysis should be provided for increased support and subsidies for faculty, staff and students to use transportation. These would constitute actions taken under the UCSF TDM Program. Please see responses to Comments I-Maerki-6 to I-Maerki-7, above.

I-Maerki-19 The commenter asserts that further analysis should be provided for improvements to improved bicycle travel lanes and on-campus bicycle storage. These would constitute actions taken under the UCSF TDM Program. Please see responses to Comments I-Maerki-6 to I-Maerki-7, above.

I-Maerki-20 The commenter asserts that further analysis should be provided for improvements to public transportation for bus lines on Parnassus Avenue. This would require action by SFMTA. Please see responses to Comments I-Maerki-6 to I-Maerki-7, above.

I-Maerki-21 The commenter asserts that as part of the request to install a new traffic light at Hillway/Parnassus, UCSF should consider support for improved bus stops, including shelters, seating, contributions to Next Bus/arrival signage, and signal enhancements. These improvements would require action by SFMTA. Please see responses to Comments I-Maerki-6 to I-Maerki-7, above.

I-Maerki-22 The commenter indicates further analysis of the alternative hospital size and design options, including the Shorter New Hospital with Additional Basement Levels. The commenter argues that additional services can be placed underground in windowless spaces. The commenter indicates that the Zuckerberg San Francisco General Hospital have services and in basement levels, including Perioperating/Gastro-Intestinal, Clinical laboratory, Cardiology/Radiology/ Auxiliary Support and Plant Services. The commenter adds that a number of current UCSF Parnassus Heights Clinical Sciences and Imaging Services off the Irving Street entrance under the parking garage. The commenter also asserts that there are design solutions that would permit light to reach levels below grade.

The NHPH project includes limited clinical functions that would benefit from, or be indifferent to, windowless environments as suggested. To reduce the overall scope of the project, some clinical functions would remain in existing buildings and those functions proposed in the new building would be collocated to promote the sharing of patient care and support spaces to reduce area and maximize clinical staff efficiency. Fragmenting a few procedure rooms to the basement would require additional space and additional nursing staff. Following best practices and similar to peer institutions, patient preparation and recovery areas for all procedure rooms are standardized and adjacent to windows whenever possible.

Early design options maximized the basement area by placing the Imaging department in the basement, however, as inpatients in the tower above would be the primary patient population this will support, the location presented challenges with increased elevator demand. Additionally, the density of the program above would offer limited lightwell opportunities for access to daylight for patients and for the staff that would be working in the department for extended time periods.

The proposed design would place the Sterile Processing department in the basement, with dedicated elevators to receive and distribute surgical instrument carts to the procedure floors above. For other time-sensitive support functions, it was determined that these areas, including Pharmacy and Blood Bank, would be best located close the patient populations they serve for safety and efficiency reasons.

The proposed design also places certain mechanical infrastructure in the basement and a sub-basement. This includes mechanical chillers, plumbing pumps and storage tanks; all systems that are connected to the rest of the building

through pipe networks. Substantial studies were completed to evaluate if mechanical air handling equipment or electrical equipment could be placed in the basement. Analysis determined that the necessary resiliency of these systems and the amount of floor area necessary to provide clean air movement from a safe distance above street level down to the basement for conditioning, and then back up to the clinical departments would be too detrimental to the utilization of the remaining floor space.

I-Maerki-23 The commenter indicates the factors discussed in the NHPH Draft EIR that contribute to the Shorter New Hospital with Additional Basement Levels not being feasible, including additional excavation, construction disruption and schedule/costs must be evaluated in the context of the CPHP. The NHPH Draft EIR Section 6, *Alternatives*, Section 6.4.4 explanation of those construction, technical and cost factors that would pose a constraint in providing additional basement levels in the New Hospital are similarly applicable when considered in the context of the CPHP, given the site-specific nature of the constraints.

The commenter also indicates the NHPH Draft EIR provides little discussion of how the planned basement level with connection to the underground tunnel would occur. With respect to proposed tunnel beneath Parnassus Avenue, the NHPH Draft EIR Chapter 3, *Project Description*, provides a description of this feature to the extent information is currently available. As explained in Chapter 3, two potential tunnel alignments are under consideration (i.e., west and east connection options), as illustrated in Figures 3-22 and 3-23 in the NHPH Draft EIR. Under either option, the proposed tunnel would be about 20 feet wide and be located approximately 30 to 40 feet below grade. As shown in Figure 3-23 in the NHPH Draft EIR, Chapter 3 *Project Description*, the proposed tunnel would connect to an elevator in the New Hospital that would provide access to the hospital basement level.

I-Maerki-24 The commenter states that the deadline of December 13, 2030 imposed by SB 1953 may not be a hard deadline, because the deadline was previously extended on several occasions.

As discussed in NHPH Draft EIR Section 4.6, *Geology and Soils*, UCSF's hospitals fall under the jurisdiction of the *Alquist Seismic Safety Act* and SB 1953, which is an amendment of the Act. SB 1953 was adopted in part so that, after a major earthquake or disaster, hospital facilities can continue to provide care to their current occupants as well as any new patients that might arrive after the event. The *Alquist Seismic Safety Act* and SB 1953 require all hospital facilities to comply with seismic safety building standards as defined by the California Department of Health Care Access and Information. It would inappropriate for the NHPH Draft EIR analyses to arbitrarily assume that a scheduled regulatory deadline will be extended, despite the circumstance that prior extensions may have occurred.

It would also not be prudent for UCSF to base its planning efforts for the New Hospital on an uncertain extension of the 2030 regulatory deadline.

I-Maerki-25 The commenter argues that the incremental cost from adding additional basement levels is small relative to the NHPH project, and the entire CPHP. The NHPH Draft EIR discloses all factors considered by UCSF in determining the feasibility of this potential alternative, including ability to achieve project objectives; construction, operational and schedule constraints; and potential increases in construction-related environmental impacts; in addition to cost implications. When considering all these factors, UCSF concludes that this potential alternative would not be feasible, and on this basis, it was not carried forward for detailed evaluation in the NHPH Draft EIR.

I-Maerki-26 The commenter argues that the cost of excavation for the construction of the RAB project is likely many times greater than the cost of excavation for the additional basement levels for the New Hospital.

It is not for this EIR to compare the cost of the proposed project to other projects that will be undertaken by UCSF. No response is required. It should be noted, however, that the amount of excavation required for the NHPH project, including the proposed tunnel, is 110,700 cubic yards (page 3-48 in the NHPH Draft EIR), whereas the amount of excavation estimated for the RAB project was 77,000 cubic yards (page 3-37 in the CPHP Final EIR).

I-Maerki-27 The commenter argues that by placing more services in basement levels and lowering the overall height of the New Hospital, the project's shadow and wind effects would be reduced.

CEQA requires an EIR to evaluate feasible alternatives that reduce the significant effects of the proposed project. Based on the analysis conducted by UCSF presented in the NHPH Draft EIR, it is not feasible to add additional basement levels and bring the overall height down. Therefore, the NHPH Draft EIR appropriately dismisses this alternative from detailed evaluation.

February 14, 2022

UCSF Campus Planning
P.O. Box 0287
San Francisco, CA

Attn: Diane Wong (EIR@ucsf.edu)

Subject: Draft Environmental Impact Report (DEIR) on New Hospital at Parnassus Heights (NHPH) Project

Dear Ms. Wong:

We are submitting comments on the subject DEIR. Over the past thirty years, we have been property owners and concerned members of the Haight Ashbury neighborhood located adjacent to the project site. We are both professionally trained and experienced in land use law, regulation, and long-range planning, and have over sixty years of combined related experience working for the State of California. Also, we (and family members and friends) have been patients at UCSF and have great respect for the institution. That said, we **oppose** the project as described in the DEIR because the document violates the provisions of California Environmental Quality Act (CEQA) and inadequately analyzes and describes the adverse impacts (including those potentially resulting from a full build-out of the project site, i.e., CPHP, for which details are not specifically provided in the subject DEIR). In addition, the comment period is inadequate to provide meaningful input for such a large project and a 1400-page document, and we, therefore, ask that the comment period be extended. Our comments about the proposed NHPH *only* are below: 1 2 3

Scale and Scenic Impacts: The proposed 15-story hospital—actually 16 stories when including the rooftop utility story—is significantly out of scale with the immediate, surrounding (including open space area), and more distant neighborhoods from where the project would be visible (and impacts experienced), as shown in figures provided on Pages 148-158 of the DEIR. The scale of the project has substantial adverse impacts on views of and from within the Sutro Reserve. To ensure a scale appropriate for the general and extended neighborhood, the proposed new hospital height should be lowered to match that of existing adjacent buildings. Moreover, all rooftop utilities should be removed from proposed building and moved to the back of the structure or be located at a lower or ground level. 4 5

Shadows: The shadows to be cast by the proposed development as clearly shown in studies prepared by your team would adversely affect the following foundational and critical community resources used by neighbors and residents throughout the City of San Francisco: Grattan playground and community center, Grattan Elementary School, and Golden Gate Park including the nursery grounds that grow and provide landscaping materials for the entire park. The DEIR inadequately discusses the impacts related to 6 7

this significant change in local climate conditions for school children and teachers, recreation enthusiasts, nursery operations, etc. 7 cont.

Capacity and Project Necessity: We understand that the proposed project is intended to support patient care and stay and other elements related to campus function. At a time when more and more employees are working remotely—*including* those employed full-time by the Parnassus campus—we believe that the DEIR inadequately discusses these changed work conditions and how a reduced on-site work force relates to the capacity needs related to the proposed development. In addition, the document inadequately explains how the proposed project fits with UCSF's operations at the Mission Bay campus, which is an ever-expansive development with what appears to be ample and even excess capacity for employees, patients, and visitors. Furthermore, it is our understanding that a prior agreement between UCSF and the community established a limit on development at the Parnassus campus and that the project now proposed in the DEIR significantly exceeds that limit and, thus, would potentially violate the terms of prior agreements. 8 9 10

Pedestrian Bridge: The majority of figures and images in the DEIR, including the cover image, do not show the proposed bridge making it extremely difficult to comment on the design, view impacts, and functionality of this project element. The document does not adequately explain why the bridge is needed especially since it appears to be redundant with a proposed tunnel. Besides we are concerned as to why project sponsors would include a bridge when other such structures are presently being removed in San Francisco, i.e., along Geary Street. Pedestrian bridges can send the wrong signal to motorized vehicles encouraging drivers to exceed allowable speed limits since pedestrians are no longer in the way! The DEIR should discuss this project element and its impacts as well as address how it would fit in with the City's Vision Zero program. 11 12 13

Biological Resources: The DEIR discusses cutting away a portion of the adjacent open space area to widen a road behind the hospital and construct a retaining wall. The document should discuss how the loss of this area would impact the natural resources and wildlife depending on the open space area—not only at the immediate location impacted by proposed construction but throughout the entire reserve. The project would clearly have a substantial impact on the open space area in its entirety as enjoyed by wildlife and people. 14

Transit: The document inadequately analyzes and projects the demands on transit associated with the proposed project after (and during) construction. We are concerned that a significantly expanded community hospital is not coupled with a serious public transit plan developed through and in close collaboration with SFMTA. It is unconscionable that the document examines only four existing MUNI transit lines when the hospital serves the *entire* city with visitors traveling from throughout its boundaries. Further, the DEIR states that four MUNI lines would be "improved" if needed to serve the proposed project. Why wait until after the project has been built and in operation for public transit improvements to be assessed and implemented? In light of the project scope and size, the DEIR should include a sophisticated feasible transit plan that 15 16 17

examines (and proposes) affordable, accessible, frequent, and adequate service: without that, the proposed project looks like one out a different era before intelligent cities and people understood that getting people out of private vehicles mattered and providing meaningful public transit options was essential. On a related note, last we checked, Mayor Breed's administration committed to a Climate Action Plan, therefore the DEIR should discuss how the omission of a sophisticated public transit program for the project facilitates reaching the goals of that plan.

17 cont.

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Thank you for considering our comments. We look forward to receiving your responses.

Sincerely,

Jaime Michaels
Clayton St. 94117
jaimeenroute@yahoo.com

Tim Eichenberg
Hayes St., 94117
timeichenberg@yahoo.com

Responses to Comments from Jamie Michaels and Tim Eichenberg

I-Michaels/Eichenberg-1 The commenters provide some background comments that are not related to the adequacy of the NHPH Draft EIR; consequently, no response is required.

I-Michaels/Eichenberg-2 The commenters indicate they oppose the project as described in the NHPH Draft EIR because the document violates the provisions of CEQA and inadequately analyzes and describes the adverse impacts, including those potentially related to those potentially resulting from a full buildout of the project site.

As discussed in **Master Response 2: General Comments on EIR and Environmental Topics**, no direct response is possible to the majority of the comment, as it lacks specificity. However, with respect to the comment made about analysis of impacts of full buildout, please see Section 4.0, *Approach to Environmental Analysis*, on pages 4.0-7 to 4.0-9 in the NHPH Draft EIR. The NHPH Draft EIR cumulative impact analysis in each of the impact topics addressed all potential impacts of the NHPH, in combination with other cumulative development, including that of the CPHP under full buildout, as applicable.

I-Michaels/Eichenberg-3 The commenters assert that the comment period is inadequate to provide meaningful input for the large project and NHPH Draft EIR, and request the comment period be extended.

UCSF released for public review the Draft EIR on the NHPH on December 16, 2021. A 60-day public review and comment period on the Draft EIR began on December 16 and closed on February 14, 2022, which exceeded the 45-day public review and comment period required under CEQA (State CEQA Guidelines Section 15105(a)). UCSF also held a public hearing on January 19, 2022 via Zoom to receive oral comments on the Draft EIR.

Pursuant to CEQA Guidelines Section 15105(a), the public review period should not be longer than 60 days except under unusual circumstances. UCSF did not determine any unusual circumstances merited extending the public review period beyond 60 days.

I-Michaels/Eichenberg-4 The commenters assert that the scale of the New Hospital is significantly out of scale with the immediate surrounding and has substantial adverse impacts of views of and from the Sutro Reserve, and recommend lowering the height to match that of existing adjacent buildings.

All potential aesthetic impacts of the proposed New Hospital were addressed in the NHPH Draft EIR, including those related to views to and from the Sutro Reserve.

With respect to views of the Reserve, as discussed on NHPH Draft EIR page 4.1-24, from certain scenic viewpoints in the City, such as from Grandview Park, the New Hospital would be noticeable and partially obstruct views of the lower portion of the north slope of Mount Sutro. However, the Reserve would continue to be a prominent scenic resource from this view due to its elevation and visibility from long distance. In addition, with respect to views from within the Reserve, as discussed in Impact AES-1, pages 4.1-27 to 4.1-28, while from certain viewpoints within the Reserve, the proposed New Hospital would be noticeable and would obstruct northward scenic views across the campus core views from within the Reserve are largely obstructed under existing conditions by dense vegetation and/or topography, and in general, the Reserve does not provide long range scenic views. As such, development of the New Hospital would not adversely affect scenic vistas from within the Reserve. The NHPH Draft EIR finds that the New Hospital's impact on scenic vistas would be less than significant.

The commenters are also referred to the NHPH Draft EIR, Chapter 6, *Alternatives*, which addressed a number of potential alternatives to the proposed project that were lower in height than the New Hospital proposed under the NHPH, including a Smaller Hospital per the 2014 LRDP, a Reduced Project, and a New Hospital – Phased Option.

I-Michaels/Eichenberg-5 The commenters suggest that all New Hospital rooftop equipment should be removed from the building and moved to the back of the structure or to a lower or ground level.

The proposed New Hospital design accommodates as much mechanical equipment indoors within the basement of the building as feasible, thereby minimizing the amount of mechanical equipment on the roof. The design locates certain roof equipment that require access to the outdoors, such as the cooling towers and generators. Locating these elements outdoors at grade level behind the New Hospital as the commenter suggests would take away substantial square footage for the entire NHPH project, resulting in a smaller building footprint that would necessitate a taller building to achieve the same program. As a result, this suggested design change would not be feasible.

I-Michaels/Eichenberg-6 to I-Michaels/Eichenberg-7

The commenters assert that the shadows to be cast by the proposed development would adversely affect resources used by neighbors and residents throughout the City, and affect the change in climate conditions for school children and teachers, recreation enthusiasts, and nursery operations, among other issues.

With respect to shadow impacts, as explained in Impact AES-5 in the NHPH Draft EIR, the shadow analysis is limited to whether the NHPH would cast new shadow on publicly accessible open spaces in the vicinity of the campus site and whether this new shadow would adversely affect the use and enjoyment of these open spaces. Accordingly, the analysis assesses shadow impacts of the NHPH on three City parks (Golden Gate Park, Richard Gamble Memorial Park, and Grattan Playground), and on two schoolyards that participate in the Shared Schoolyard Project and provide public access on weekends (Independence High School and Grattan Elementary School). The Interior Greenbelt located adjacent to and east of the Reserve, and the Reserve itself located within the campus site, were also studied for this analysis. As analyzed in Impact AES-5, implementation of the NHPH would not adversely or substantially affect the use and enjoyment of these open spaces, and the impact was therefore concluded to be less than significant. Impact C-AES-4 determined that implementation of the NHPH in combination with cumulative projects reached a similar conclusion, and consequently, the cumulative shadow impact would also be less than significant.

I-Michaels/Eichenberg-8 The commenter indicates that the NHPH Draft EIR should discuss changes in work changes due to employees working remotely, and how a reduced workforce affects capacity needs of the proposed New Hospital.

As discussed in Section 4.13 *Transportation*, page 4.13-2, UCSF states that as part of its existing TDM program, that it implements telecommuting policies that allow certain employees to work remotely for one or more days per week, which reduces travel demand to/from the campus sites, including the Parnassus Heights campus site. Also, Section 4.13, page 4.13-31 acknowledges that the COVID-19 pandemic has resulted in less total travel to the campus; while the majority of clinical staff have continued to work in-person, the majority of administrative staff continue to work from home. Whether and when staff who have shifted to remote work during the pandemic will return to the workplace at full or reduced capacity will be determined by job position/requirements and individual departments.

Section 4.13, page 4.13-33 reports that at the time of publication of the NHPH Draft EIR, the medium- or long-term effects of the COVID-19 pandemic on travel behavior are uncertain and it would be speculative to estimate any of these possible changes, which may include various effects such as increased telework and telemedicine services or less transit ridership. To the degree that telework/telemedicine increases over the long-term, as compared to a pre-COVID-19 (January 2020)

baseline, this could result in less VMT than projected as part of this study. Should transit ridership decrease over the long-term, as compared to a pre-COVID-19 (January 2020) baseline, with more people choosing to drive or be driven, this could result in additional VMT than projected as part of this study.

The planning for the New Hospital and renovation of Long and Moffitt Hospital are being conducted in consideration of the evolving conditions. As explained in the NHPH Draft EIR Chapter 3, *Project Description,* Subsection 3.5 *Project Need*, learning from the current COVID-19 pandemic, it is extremely critical for clinical facilities to be flexible and have the ability to increase inpatient capacity to accommodate additional clinical needs during these times, rather than reducing or canceling non-essential surgeries in order to reduce patient census. Based on observed shortages in the availability of beds, especially intensive care unit and acute care beds; an analysis of demographic trends that indicate that the Medical Center will need to serve not only a larger population but also a population that includes more elderly patients; an analysis of the demand/need for private rooms; and an analysis of trends in health care which show an increased need for tertiary and quaternary health care, UCSF Health determined that the proposed hospital would need to provide inpatient beds, along with other necessary facilities that include additional operating rooms, additional emergency room bays and spaces, additional interventional labs, and ambulance bays. The proposed renovation of Moffitt and Long Hospitals would provide inpatient beds to augment those proposed at the New Hospital, and facilitate the inpatient clinical and support program needs for the increased patient capacity at Parnassus Heights.

Please also see responses to Comments I-Maerki-6 to I-Maerki-7.

I-Michaels/Eichenberg-9 The commenter indicates that the NHPH Draft EIR inadequately explains how the proposed project fits in with UCSF operations at the Mission Bay campus site.

Please see the response to Comment I-Welborn-19. As explained in more detail there, the Mission Bay inpatient facilities consist of three specialty hospitals dedicated to children's, women's, and cancer care. This is distinct from the Parnassus Heights hospital which is the nexus of the majority of adult acute care, intensive care, emergency care, and range of specialized services. The proposed NHPH would expand upon adult services at Parnassus Heights to address the need for increased bed capacity.

I-Michaels/Eichenberg-10 The commenter indicates a prior agreement established a limit on development at the Parnassus Heights campus site, and the that NHPH project substantially exceeds that limit, and thus, would potentially violate the terms of prior agreements.

While the proposed NHPH would result in an increase in square footage and population at the Parnassus Heights campus site, in January 2021, the Regents amended the 2014 LRDP to revise space program, update the projected population, and revise the Regents' Resolution to increase the space ceiling at the campus site. As such, the NHPH would be within the size and population parameters of the 2014 LRDP, as amended.

I-Michaels/Eichenberg-11 The commenters indicate that the majority of figures and images in the NHPH Draft EIR do not show the proposed Parnassus Avenue pedestrian bridge.

The NHPH Draft EIR presents available information on the proposed pedestrian bridge and tunnel, including its approximate proposed location along Parnassus Avenue, bridge and tunnel height and width, and elevation above and below grade, respectively; and the functional purpose of both facilities. While it is expected that further design details on the proposed pedestrian bridge and tunnel will become known as the design process proceeds for these project elements, the pedestrian bridge and tunnel are nonetheless described at a sufficient level of detail in the NHPH Draft EIR to allow evaluation of their potential environmental impacts during both construction and operation.

I-Michaels/Eichenberg-12 The proposed pedestrian bridge and proposed tunnel would address different needs and functions. The commenters indicate the NHPH Draft EIR does not adequately explain why the bridge is needed especially since it appears to be redundant with the proposed tunnel.

The proposed pedestrian bridge would facilitate travel for New Hospital patrons, UCSF employees and the public over Parnassus Avenue, and connect the New Hospital to the planned Irving Street Arrival. The proposed tunnel would serve to facilitate travel for UCSF employees and patients, movement of goods and materials, and accommodate utility lines across Parnassus Avenue between Medical Building 1 and the New Hospital.

I-Michaels/Eichenberg-13 The commenter indicates the NHPH Draft EIR should discuss the Parnassus Avenue pedestrian bridge and its impacts and how it would fit in with the City's Vision Zero program.

With respect to environmental impacts, as applicable, each impact statement in the NHPH Draft EIR provides a dedicated discussion of impacts solely as a result of the proposed Parnassus Avenue pedestrian bridge and tunnel.

With respect to the City Vision Zero program, Vision Zero SF is the City's road safety policy adopted in 2014, and intended to build safety and livability into the City's streets, educate the public on traffic safety, and enforce traffic laws. The *2021 Vision Zero SF Action Strategy* sets out strategic actions for city departments and agencies to reach the city's Vision Zero goal.

As discussed in Section 4.10, *Land Use and Planning,* the Parnassus Avenue pedestrian bridge would serve to reduce existing traffic congestion related to the transport of patients that are admitted to Medical Building 1, and then must be transported across Parnassus Avenue by ambulance to Moffitt Hospital. In addition, the pedestrian bridge would be situated up to 30 feet above grade, providing enough clearance so that the overhead catenary wires for the electric bus system have enough clearance to allow for safe operation. Furthermore, as discussed in Section 4.13, *Transportation*, the proposed Parnassus Avenue pedestrian bridge project would improve pedestrian connections between the north and south sides of the street and would not conflict with a program, plan, ordinance, or policy addressing the circulation system. The proposed Parnassus Avenue pedestrian bridge project would be designed based on applicable design standards for pedestrian bridges in San Francisco, and would be subject to review and approval by relevant City departments. Given all these factors, the proposed Parnassus Avenue pedestrian bridge would not appear to conflict with the City's Vision Zero program.

I-Michaels/Eichenberg-14 The commenters indicate the NHPH Draft EIR discusses cutting away a portion of adjacent open space area to widen Medical Center Way and construct a retaining wall, and the commenter then indicates that the NHPH Draft EIR should discuss how the loss of this area would impact the natural resources and wildlife in the immediate area at the Reserve as to the Reserve as a whole.

The commenter is apparently referring to the proposed medical gas tanks replacement project, which as described in the EIR Project Description, pages 3-38 to 3-39, would cause both a temporary construction disturbance area and a permanent encroachment area within the Reserve.

NHPH Draft EIR Section 4.3, *Biological Resources,* Impact BIO-1 discussed the potential for the proposed medical tanks replacement

project to potentially disturb or remove coastal triquetrella that may be present in the area of disturbance; and that construction noise and related effects could impact special-status wildlife species. The NHPH Draft EIR determined that implementation of NHPH Mitigation Measure BIO-1e, Botanical Surveys would reduce the potential impact of the NHPH on the coastal triquetrella plant species to a less-than-significant level. The NHPH Draft EIR also determined that implementation of NHPH Mitigation Measure BIO-1a, Protection of Monarch Butterflies; NHPH Mitigation Measure BIO-1b, Protection of Nesting Birds; NHPH Mitigation Measure BIO-1c, Protection of Roosting Bats, and NHPH Mitigation Measure BIO-1d, Worker Education, would ensure potential impacts of the NHPH on wildlife species would be less than significant.

Also, NHPH Draft EIR Section 4.3, *Biological Resources*, Impact BIO-2 discussed the potential for temporary construction lighting; and during operation, permanent nighttime security lighting, at the location of the proposed medical tanks replacement project to potentially pose an increased hazard for bird strikes. The NHPH Draft EIR determined that implementation of NHPH Mitigation Measure BIO-2a, Prevention of Harm to Migrating Birds During Construction; and NHPH Mitigation Measure BIO-2b, Bird-Safe Building Treatments, would ensure potential lighting impacts from the medical gas tanks replacement project would be less than significant.

I-Michaels/Eichenberg-15 The commenters assert that the document inadequately analyzes and projects the demands on transit associated with the proposed project after and during construction; and that the New Hospital is not coupled with a serious public transit plan development in collaboration with SFMTA. The commenter questions why the NHPH Draft EIR only examines four Muni lines when the hospital serves the entire city. Please see responses to Comments I-Maerki-6 to I-Maerki-7, above.

I-Michaels/Eichenberg-16 The commenters inquire why wait until after the project has been built and in operation for the public transit improvements to be assessed and implemented. Please see responses to Comments I-Maerki-6 to I-Maerki-7, above.

I-Michaels/Eichenberg-17 The commenters assert the NHPH Draft EIR should include a sophisticated feasible transit plan that examines and proposes affordable, accessible, frequent, and adequate service. Please see responses to Comments I-Maerki-6 to I-Maerki-7, above.

I-Michaels/Eichenberg-18 The commenters state that the NHPH Draft EIR should address consistency with the City's Climate Action Plan under its assessment

of relevant Plans and Policies, and that the Project does not adequately promote public transit use. As the NHPH is under the jurisdiction of the University of California, the NHPH Draft EIR assesses compliance with the UC Policy on Sustainable Practices in the Energy, Greenhouse Gas Emissions, and Transportation sections, and notes that it is in compliance with the relevant transportation strategies set forth in the 2017 Clean Air Plan (p. 4.2-38 to -39; 4.13-44). Please see the responses to Comments I-Maerki-6 to I Maerki-7 for a discussion of UCSF' coordination with SFMTA and support for transit that serves the campus community as well as UCSF's approach to and obligations of TDM measures for the campus site.

From:	Nancy Wuerfel
To:	Campus Planning - EIR
Subject:	COMMENTS on DRAFT EIR for New Hospital at Parnassus Heights
Date:	Monday, February 14, 2022 4:55:33 PM

February 14, 2022

TO: Diane Wong UCSF
FROM: Nancy Wuerfel, 2516 23rd Avenue, San Francisco, CA 94116
RE: DRAFT EIR for New Hospital at Parnassus Heights

This email is in response to the draft Environmental Impacts Review for the UCSF New Hospital at Parnassus Heights (NHPH). I request that the EIR acknowledge the impacts on the Public Services that I present in my response, and that the EIR is revised to find that there are significant impacts by the project which may be mitigated through an amendment to the UCSF-CCSF MOU. 1 2

Please acknowledge receipt of my comments.

SPECIFIC CONCERNS

SECTION 3.2 Campus Site Location and Characteristics

ENVIRONMENTAL SETTING (a) An EIR must include a description of the physical environmental conditions in the vicinity of the project AND (c) Knowledge of the regional setting is critical to the assessment of environmental impacts.

COMMENT: This section does not include information from the United States Geological Survey (USGS) website that states "The San Francisco Bay Area is transected by a series of subparallel faults that together accommodate the relative motion between the Pacific and North American plates. The San Andreas Fault and 6 other significant fault zones are present in the Bay Area: the Calaveras, Concord-Green Valley, Greenville, Hayward, Rodgers Creek, and San Gregorio Faults." San Francisco will be impacted to some degree by rupture of any of these faults. Also, the USGS website states that "**Secondary Earthquake Hazards** are caused by a consequence of the ground shaking, which is caused by earthquakes. These secondary earthquake hazards can result in tsunamis, seiches, floods and fires. Fires, often associated with broken electrical and gas lines, are one of the most common side effects of earthquakes. Gas is set free as gas lines are broken and a spark can start a fire. To complicate things, earthquakes can cause water lines to break so there is no water source to extinguish the fire." 3

SECTION 4 Introduction to Environmental Analysis,

This section does not state the correct ruling of the California Supreme Court's decision for CALIFORNIA BUILDING INDUSTRY ASSOCIATION, Plaintiff and Respondent, v. BAY AREA AIR QUALITY MANAGEMENT DISTRICT, Defendant and Appellant. No. S213478. Decided: December 17, 2015: 4

EIR language: "Effects of the Environment on the Project - In a change since the certification of the 2014 LRDP Final EIR, in 2015 the California Supreme Court held that “CEQA generally does not require an analysis of how existing environmental conditions will impact a project’s future users or residents.” *California Building Industry Association v. Bay Area Air Quality Management District* (2015) 62 Cal.4th 369, 386. The Supreme Court explained that, where existing hazards exist, an agency is only required to

analyze the potential impact of such hazards on future residents if the project would exacerbate those existing environmental hazards or conditions. Thus, with respect to such issues as geologic and seismic hazards, exposure to existing levels of air pollution and noise, and the like, CEQA does not require consideration of the effects of bringing a new population into an area where such hazards exist, as long as the project itself would not increase or otherwise affect the conditions that create those hazards."

Verbatim ruling: III. Disposition for this case is as follows: "For the foregoing reasons, we hold that CEQA does not generally require an agency to consider the effects of existing environmental conditions on a proposed project's future users or residents. What CEQA does mandate, consistent with a key element of the Resources Agency's interpretation, is an analysis of how a project might exacerbate existing environmental hazards. "

4 cont.

COMMENT: The EIR must cite the exact language of the Supreme Court's decision. The EIR must include analysis of what the environmental hazards are and how the project might exacerbate the hazards.

SECTION 4 Environmental Setting

Impacts for UTIL-2 must discuss the Estimated Water Demand for firefighting required to protect the NHPH. This water is provided by the SFPUC, but it is not metered and not billed, and is provided without cost throughout San Francisco. The WSE report from WEST YOST only documents use and demand for *potable water* that is billed and metered, not for firefighting water. The following documents describe the inadequacy of water supply to and infrastructure for firefighting activities citywide and specifically on the westside:

(1) 2018-2019 CIVIL GRAND JURY report "Act now before it is too late: Aggressively expand and enhance our high-pressure emergency water system." The report concludes that San Francisco must rapidly expand the City's Emergency Firefighting Water System (EFWS) to protect all neighborhoods in the event of a major earthquake and fire, given that the vulnerability of the City poses a serious threat to the well being of San Francisco and the safety of its inhabitants and environment. Appendix A provides details of the Findings and Recommendations. Appendix G provides a map of the USGS fault lines in the Bay Area. Appendix H and I provide maps of the EFWS and the high-pressure AWSS systems.

(2) The Board of Supervisors (BOS) Resolution 484-19 File 191029, passed November 19, 2019, declared **a state of urgency** to expand the EFWS to cover all unprotected neighborhoods by 2034 and required reports from City departments on the city's preparedness. The BOS continues to hold hearings on the City's progress to comply with the resolution. However, the City has not committed to a specific plan of action, with specific funding identified, or even agreed to completing all projects before the USGS estimated date of 2043 when a major earthquake is likely to hit the Bay Area.,

5

(3) Professor Charles Scawthorn, S.E. prepared a report dated June 7, 2021 commissioned by the SFPUC entitled "Fire Following Earthquake Water Requirements Study." The study was shared with the Board of Supervisors in response to a commitment made to the 2019 Civil Grand Jury. "The purpose of this project has been the estimation of water required to suppress fires following a major eathquake affecting the city of San Francisco." "San Francisco has substantial assets at risk... threatened by earthquakes and the fires that will follow." "The San Francisco FIre Department (SFFD) will be challenged by a major earthquake... will likely generate about 130 fires in the first 24 hours..." "Lacking adequate water leads to continued fire growth and a larger demand for firefighting water than at first arrival..." "In conclusion, depending on the expansion of the Emergency Firefighting Water System (EFWS) and the capacity of SFFD, there may or may not be adequate amounts of water at some fires when the engines arrive, which would lead to continued fire growth and a larger demand for firefighting water..."

(4) The SFPUC has received CEQA statutory exemption for Project Number CUWAW2AW29 in

2016, 2017 and 2018 to construct the Clarendon Water Supply Project that would tie-in potable water system from a main on Clarendon to connect this water to the Auxiliary Water Supply System (AWSS) at Twin Peaks Reservoir This is necessary because "additonal supply to the Twin Peaks Zone is required to strengthen the AWSS system to allow potable waster to be used by the AWSS in an emergency," and to meet anticipated firefighting demands in western San Francisco following the next large earthquake.

COMMENT: These reports are directly relevant to the EIR for the NHPH to clarify the danger that UCSF users and residents are exposed to from fires following an earthquake because of the need for the SFFD to have access to more water for firefighting. The current plan is for the SFPUC to use the locally stored potable water in city reservoirs for firefighting. This action creates a new environmental hazard - that of depleting potable water needed for human uses and sanitation instead of using unlimited ocean seawater for fighting fires.

Firefighting water issues do exacerbate the secondary earthquake hazard of fires, since UCSF will be major provider of healthcare services after an earthquake but it will be compromised by a lack of potable water when local water supplies are redirected. Therefore, there is a significant environmental impact on UTIL 2 that requires further analysis and mitigation because the project might cause or risk exacerbating by bringing development and people into the area affected

5 cont.

2019 CEQA STATUTE AND GUIDELINES published by the Association of Environmental Professionals

CEQA GUIDELINES FOR MITIGATION:

Section 15126.4 - CONSIDERATION AND DISCUSSION OF MITIGATION MEASURES PROPOSED TO MINIMIZE SIGNIFICANT EFFECTS. (a) Mitigation Measures in General. (2) Mitigation measures must be fully enforceable through permit conditions, agreements, or other legally binding instruments. In the case of the adoption of a plan, policy, regulation, or other public project, mitigation measures can be incorporated into the plan, policy, regulation, or project design.

EXISTING REGULATIONS AND AGREEMENTS

---The California Constitution Article XIII , section 2.2 (a) Protection of Fire Services, Emergency Response, and County Services. It is the intent of the Legislature in proposing, and the people in adopting, this section and Section 2.3 to do both of the following: (1) Dedicate revenue for fire protection and emergency response, *address inequities in underfunded fire districts,* ensure all communities are protected from wildfires, and safeguard the lives of millions of Californians. (2) Protect county revenues and other vital local services, and section 35 (2) The *protection of the public safety is the first responsibility of local government* and local officials have an obligation to give priority to the provision of adequate public safety services.

---The Regents of the University of California minutes for its meeting on November 18, 2021, Item 1 Strategic Campus Overview, San Francisco Campus, included Chancellor Hawgood's comments that presented an overview of UCSF's vision for the future including the ten-year plan for a new hospital at Helen Diller Medical Center. He noted "As part of the Parnassus Heights Comprehensive Program, *UCSF entered into a MOU with the City of San Francisco* to add another 1,200 housing units for staff, specifically lower compensated staff."

---Mayor London Breed announced on January 4, 2021 that San Francisco and UCSF had a landmark comunity benefits package as part of the New Hospital Project at Parnassus Heights Campus. The package includes affordable workforce housing, transit improvements, and other community investments while improving a critical emergency facility serving San Francisco's westside.

MITIGATION REQUESTED FOR SIGNIFICANT IMPACTS ON UTILITIES

6

COMMENT: Chancellor Hawgood's comments at the UC Regents meeting in 2021 that UCSF had entered into an MOU with CCSF provides the instrument to be used for mitigating the significant EIR impacts on Section 4.14 Utilities and Service Systems, UTIL 2 and C-UTIL 1. To comply with the documented need for an increase in fire fighting water to be available to serve the westside of San Francisco where the NHPH is located, there should be an amendment to the MOU between UCSF and the City and County of San Francisco (CCSF) . This amendment must specify an agreement for the CCSF to provide unlimited seawater through dedicated high pressure pipelines and hydrants necessary to suppress fires that threaten the NHPH, while preserving locally stored potable water for human uses and sanitation. To help realize Mayor Breed's announcement that the new hospital will be improving a critical emergency facility serving San Francisco's westside, the City and UCSF must both contribute towards financing projects that will achieve the California Constitution's requirement to "Dedicate revenue for fire protection and emergency response [to] *address inequities in underfunded fire districts..."* To achieve the timelines for completing NHPH project as planned and to complete the fire protection projects for the underserved westside, It is strongly recommended that both parties to the MOU expedite negotiations for this MOU amendment.

6 cont.

Thank you for considering my comments.

Sincerely,

Nancy Wuerfel

Responses to Comments from Nancy Wuerfel

I-Wuerfel-1 The commenter indicates their comments on the NHPH Draft EIR. The comment is acknowledged; please see responses that follow.

I-Wuerfel-2 The commenter requests that the NHPH EIR acknowledge impact on public services as presented in her comment letter, and that the NHPH Draft EIR be revised to disclose significant impacts which may be mitigated through an amendment to the UCSF-CCSF Memorandum of Understanding (MOU). Please see responses to specific comments raised on these issues, below, particularly response to Comment I-Wuerfel-6.

I-Wuerfel-3 The commenter asserts that NHPH Draft EIR Section 3.2, *Campus Site Location and Characteristics*, should include information from the United States Geological Survey regarding faults in the region; and secondary earthquake hazards associated with groundshaking that can result in tsunamis, seiches, floods and fires.

Please see NHPH Draft EIR Section 4.6, *Geology and Soils.* Subsection 4.6.1, *Environmental Setting* discusses and illustrates active faults in the vicinity of San Francisco, including those mentioned by the commenter.

With respect to potential fires associated with broken electrical and gas lines, or the potential for water lines to break, as a result of an earthquake, this is addressed in Section 4.6 in Impact GEO-1, where it is acknowledged that "(i)ntense ground shaking and high ground accelerations would affect the entire area and the primary and secondary effects of ground shaking could damage structural foundations, distort or break infrastructure, and place people at risk of injury or death." However, Impact GEO-1 also discusses that with compliance with the regulatory requirements and the implementation of geotechnical design recommendations consistent with seismic design criteria, impacts related to seismic shaking associated with earthquakes that may occur at the New Hospital site would be less than significant.

With respect to potential effects associated with tsunamis, seiches and floods, including potentially related to earthquakes, the NHPH Initial Study (see NHPH Draft EIR Appendix A, Section 5.10(d) determined that NHPH site is not located within a 100-year flood zone; has no potential to be affected by future sea level rise; and due to its elevation and inland location, and its distance from the nearest major body of water, the project site is not susceptible to the potential effects of a tsunami or seiche. Since it was concluded no impact would occur with respect to these issues, this topic did not require further analysis in the NHPH EIR.

I-Wuerfel-4 The commenter asserts that the NHPH Draft EIR Section 4.0, *Introduction to Environmental Analysis*, does not accurately present the ruling from 2015, and

argues that CEQA still requires an analysis of how a project might exacerbate existing environmental hazards.

The NHPH Draft EIR accurately summarized the *California Building Industry Association v. Bay Area Air Quality Management District* (2015) decision in Section 4.0, page 4.0-4, stating (emphasis added):

> "The Supreme Court explained that, where existing hazards exist, an agency is only required to analyze the potential impact of such hazards on future residents if the project would exacerbate those existing environmental hazards or conditions. Thus, with respect to such issues as geologic and seismic hazards, exposure to existing levels of air pollution and noise, and the like, CEQA does not require consideration of the effects of bringing a new population into an area where such hazards exist, *as long as the project itself would not increase or otherwise affect the conditions that create those hazards.*"

As noted above, the NHPH Draft EIR acknowledges that in instances where a project may increase or affect conditions that create environmental hazards, such impacts are not exempt from analysis in CEQA. Similar text is repeated in NHPH Section 4.2, *Air Quality*, page 4.2-24, below (emphasis added):

> In the *California Building Industry Association v. Bay Area Air Quality Management District* case decided in 2015, the California Supreme Court held that CEQA does not generally require lead agencies to consider how existing environmental conditions might impact a project's users or residents, *except where the proposed project would exacerbate an existing environmental condition.*

Similar text is also repeated in NHPH Section 4.6, *Geology and Soils*, page 4.6-17 (emphasis added):

> "In 2015, the California Supreme Court held that CEQA generally does not require a lead agency to consider the impacts of the existing environment on the future residents or users of a project [*California Building Industry Association v. Bay Area Air Quality Management District* (2015) 62 Cal. 4th 369.]. *However, if a project exacerbates a condition in the existing environment, the lead agency is required to analyze the impact of that exacerbated condition on the environment, which may include future occupants of the project.*

As such, the NHPH Draft EIR accurately interprets and applies the *California Building Industry Association v. Bay Area Air Quality Management District* decision in analyzing impacts where existing hazards exist and could be exacerbated by the project.

I-Wuerfel-5 The commenter asserts Impact UTIL-2 in the NHPH Draft EIR must discuss the estimated water demand for firefighting required to protect the NHPH. The

commenter indicates the Water Supply Evaluation (WSE) prepared in support of the NHPH Draft EIR does not reflect water used for firefighting.

The focus of Impact UTIL-2 in the NHPH Draft EIR is to answer the CEQA Guidelines Appendix G significance criteria item: Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years? The WSE prepared in support of the NHPH Draft EIR appropriately estimated the NHPH water demand based on operational characteristics of the New Hospital (specifically, using a UCSF water demand rate based on adjusted patient days). It would be speculative, and thus, inappropriate for the NHPH WSE to additionally estimate potential emergency water demand associated with fighting fires, given the unpredictability and infrequency of emergency water use at the campus site for firefighting.

Nevertheless, for informational purposes, the NHPH Draft EIR Section 4.14, page 4.14-5 provides a detailed description of the existing domestic and fire water system serving the campus site, including distribution pipes, storage tanks, pump stations, fire hydrants, and connections to the City's water system.

Please also refer to the NHPH Initial Study, Section 5.15, Public Services, which addressed the impact of the NHPH on fire protection services. As stated on page 63, the campus site, including the NHPH site, is located in an urban area and would not extend demand of the San Francisco Fire Department (SFFD) beyond the current limits of its service area. The anticipated population increase associated with the New Hospital and other planned development at the campus site would not adversely affect SFFD service standards nor require an increase in SFFD staff and/or equipment that would require the construction of new fire protection facilities. It was concluded that implementation of the proposed NHPH would have a less than significant impact regarding the construction of new or physically altered fire protection facilities, and this topic did not require further analysis in the NHPH EIR.

The commenter references the following sources of information and asserts that these reports are directly relevant to clarify the danger that UCSF users and residents are exposed to fire following an earthquake because of the need for the SFFD to have access to more water for firefighting:

1) a 2019 San Francisco Civil Grand Jury report that identified that areas of the City, including in the western and southern districts, were not adequately covered by the City's Auxiliary Water Supply System (AWSS);

2) San Francisco Board of Supervisors Resolution 484-19 that declared a State of Urgency to rapidly expand the City's Emergency Firefighting Water System (EFWS) to protect all neighborhoods in the event of a major earthquake and fire, and called for a comprehensive EFWS action plan to expand the City's EFWS to cover all unprotected neighborhoods by 2034;

3) a report prepared by Professor Scawthorn, S.E. commissioned by the SFPUC entitled "Fire Following Earthquake Water Requirements Study;"

4) a CEQA Statutory Exemption the SFPUC received to construct the Clarendon Water Supply Project that would tie-in the potable water system from a main on Clarendon to connect to the AWSS at Twin Peaks Reservoir.

Please note the SFPUC, in collaboration with the SFFD and San Francisco Public Works, have completed a number of EFWS construction projects within the City to improve the reliability of the EFWS following an earthquake or other disaster. These improvements have included repairs to existing reservoirs and cisterns, installation of new cisterns to improve coverage throughout the City; seismic strengthening of core facilities, and repair and expansion of pipelines and tunnel components.[5]

In addition, in recognition of the need for the City to further safeguard and enhance the its fire, earthquake and emergency response by rehabilitating critical facilities, the City passed the Earthquake Safety and Emergency Response (ESER) 2020 Bond in March 2020. One of the conceptual alternatives discussed in the 2020 ESER Bond Report to improve protection of the City's western neighborhoods is a Potable Emergency Firefighting Water System, which would consist of new seismically resistant high pressure pipelines supplied by multiple water sources, and designed to provide redundancy and ensure reliability. The selection of the ESER 2020 projects will be guided by the system's Technical Steering Committee, and determined by the Management Oversight Committee, and would be subject to the CEQA environmental review process, as applicable.[6]

When considering the existing City EFWS and domestic water systems in the campus site vicinity, UCSF's on-campus emergency water system, ongoing improvements being implemented by the City for its EFWS system, and emergency water supply and distribution improvements planned by UCSF at the campus site under the CPHP, it is not anticipated that there would be any notable deficiencies in emergency water systems serving the campus site under the NHPH.

I-Wuerfel-6 The commenter references parts of Section 15126.4 of the CEQA Guidelines regarding consideration of mitigation measures; and parts of the California Constitution Article XIII, Sections 2.2 and 2.35 related to fire protection and protection of public safety, respectively. The commenter references an announcement by the San Francisco Mayor in January 2021 that the MOU between UCSF and the City had a community benefits package that included affordable workforce housing, transit improvements and other community

5 San Francisco Public Utilities Commission website, Emergency Firefighting Water System, https://sfpuc.org/about-us/our-systems/emergency-firefighting-water-system, accessed March 15, 2022.

6 San Francisco Public Utilities Commission website, 2020 Earthquake and Emergency Response Bond Report, https://sfpublicworks.org/sites/default/files/ESER%202020%20Bond%20Report.pdf

investments while improving a critical emergency facility serving San Francisco's westside. The commenter then asserts that Chancellor Hawgood's comments at the UC Regents meeting in 2021 that UCSF had entered into a MOU with the City provide the instrument to be used for mitigating the significant EIR impacts on Section 4.14, Utilities and Service Systems, Impacts UTIL-1 and C-UTIL-1.

Please note that, contrary to commenter's assertion, the NHPH Draft EIR Impacts UTIL-1 and C-UTIL-1 were determined to be less than significant. Impact UTIL-1 addressed the potential for the NHPH to require or result in the construction of new expanded water, wastewater treatment or storm drainage, electric power or communications facilities, the construction or relocation of which would not cause significant environmental impacts. Impact UTIL-1 explained that implementation of construction-related mitigation measures and compliance with other construction-related regulatory requirements discussed in the NHPH Draft EIR would reduce construction-related effects associated with the utility improvements to a less than significant level, with no mitigation required.

Impact C-UTIL-1 addressed the potential for the NHPH, in combination with cumulative development, to not substantially contribute to cumulative impacts to utilities and service systems. As with Impact UTIL-1, Impact C-UTIL-1 showed that with implementation of construction-related mitigation measures and compliance with other construction-related regulatory requirements, cumulative impacts related to the installation of new utilities would similarly be less than significant. Impact C-UTIL-1 also determined that from an operational perspective, the NHPH would not make a considerable contribution to cumulative impacts on water supply, and cumulative impacts on the need for wastewater treatment would also be less than significant.

The commenter asserts that there should be an amendment to the MOU between UCSF and City to specify an agreement for the City to provide unlimited seawater through dedicated high pressure pipelines and hydrants to suppress fires that threaten the NHPH, while preserving locally stored potable waters for human uses and sanitation. However, the NHPH Draft EIR does not find any significant fire hazard impacts associated with the NHPH requiring mitigation or necessitating an amendment to the 2021 MOU. Please see response to Comment I-Wuerfel-3 for how the NHPH Draft EIR addressed the potential fires associated with broken utilities that could occur a result of an earthquake. Please see response to Comment I-Wuerfel-5 as it relates to the impact of the NHPH on fire protection services. Please also see the NHPH Initial Study Section 5.9(g) and Section 5.20(a-d) as it relates to potential for the NHPH to expose people or structures to risk of loss, injury or death involving wildland fires. In all cases, potential NHPH fire hazard related impacts would be less than significant.

From:	Mei Lie Wong
To:	Wong, Lily
Cc:	Campus Planning - EIR; mayorlondonbreed@sfgov.org; regentsoffice@ucop.edu; myrna.melgar@sfgove.org; dean.preston@sfgov.org
Subject:	Re: Parnassus UCSF Campus renovations
Date:	Wednesday, March 9, 2022 12:36:17 PM

As I walked around my neighborhood today I notice cars just circling to find a place to park after dropping friends or relatives off to go to the clinics or hospital. Since for the monstrous building that is going up with no more parking being built, where are these people going to part. They are not taking their friends or relatives to the hospital on Bart or Muni or certainly not all are coming by ambulance. So between the larger influx of people coming to the hospital and the larger influx of people to care for them how are you pretending that the traffic problems are being solved. Is the University going to do what it originally did "wipe out existing housing to build more large ugly buildings" or just cause more conjestion in the neighborhoods that they are ruining? 1

On Tue, Feb 1, 2022 at 10:28 AM Mei Lie Wong <meilie.wong@gmail.com> wrote:

> I read on your web site and have been at meetings and have seen the blurbs put out by your office i.e.
>
> "Our vision is to create a campus that not only encourages collaboration between our researchers, learners and care providers, but also becomes **a community destination for neighbors (?),** patients and visitors alike. 2
>
> **We've engaged our neighbors in an extensive community process** to promote greater access to our campus, **help address housing and transportation issues**, and create a welcoming environment for healing."
>
> Interesting when you do not address the fact that by not building more parking garages(a good thing) but are not making Muni better by putting a reasonable amount into that system, while putting more people onto this campus. Our neighborhoods are already flooded with cars and this will only get worse when you double or triple the number of researchers, students and medical personnel on the campus. 3
>
> I know it is hard right now, but you also are not welcoming to the neighborhood in creating spaces or anything on campus. It was better when I was working there. You are creating a building that will take away light from the neighborhood and parking, create noise and trash. So what are we getting in return? 4
>
> I am also attaching yet another perspective as to why this is a bad idea
>
> --
> Mei Lie Wong
> 412 Carl Street
> San Francisco, CA 94117

--
Mei Lie Wong
412 Carl Street
San Francisco, CA 94117

Responses to Comments from Mei Lie Wong

I-Wong-1 The commenter indicates that currently, cars circle in the neighborhood to find a place to park. The commenter indicates the New Hospital would not provide parking, and inquires where people are going to park.

With respect to parking, as discussed in Chapter 1, *Introduction*, the NHPH meets the criteria of Statute Section 21099(d) which states that parking impacts of an employment center project on an infill site located within a transit priority area shall not be considered significant impacts on the environment. As such, potential impacts of the NHPH on parking activity were not determined to be an impact under CEQA.

Nevertheless, Section 4.13, *Transportation*, pages 4.13-12 to -13 in the NHPH Draft EIR discusses UCSF existing TDM program, which includes priced permit parking, carpool/vanpool, and telecommuting programs and policies that are effective strategies to help reduce the number of drive-alone trips to/from the UCSF Parnassus Heights campus site, and thus reduce demand for parking. Section 4.13, pages 4.13-21 to -23 provides an informational discussion regarding the existing parking supply in relation to the parking demand, for both on- and off-street facilities.

I-Wong-2 The commenter cites different UCSF sources that discuss community outreach conducted by UCSF for the NHPH to date. This comment does not address the adequacy of the NHPH Draft EIR; consequently, as explained in **Master Response 1: Non-CEQA Comments**, no response is required.

I-Wong-3 The commenter indicates UCSF did not address the circumstance of not building more parking garages, and not making Muni better by putting a reasonable amount into that system, but putting more people on campus. The commenter further asserts that the neighborhood is already flooded with cars, and this would only get worse when the number of researchers, students and medical personnel is increased on the campus site. Please see responses to Comments I-Maerki-6 to I-Maerki-7.

I-Wong-4 The commenter indicates UCSF is not welcoming to the neighborhood in creating spaces or anything on campus. The commenter adds that UCSF is creating a building that will take away light from the neighborhood and parking, and create noise and trash.

With respect to the commenter's statement on the New Hospital related to shadow creation, as explained in Impact AES-5 in the NHPH Draft EIR, the shadow analysis is limited to whether the NHPH would cast new shadow on publicly accessible open spaces in the vicinity of the campus site and whether this new shadow would adversely affect the use and enjoyment of these open spaces. Accordingly, the analysis assesses shadow impacts of the NHPH on three

City parks (Golden Gate Park, Richard Gamble Memorial Park, and Grattan Playground), and on two schoolyards that participate in the Shared Schoolyard Project and provide public access on weekends (Independence High School and Grattan Elementary School). As analyzed in Impact AES-5, implementation of the NHPH would not adversely or substantially affect the use and enjoyment of these open spaces, and the impact was therefore concluded to be less than significant. Impact C-AES-4 determined that implementation of the NHPH in combination with cumulative projects reached a similar conclusion, and consequently, the cumulative shadow impact would also be less than significant.

With respect to noise generation associated with the NHPH, the NHPH Draft EIR addressed all noise and vibration impacts associated with the NHPH, including construction increases in noise levels and groundborne vibration, and operational increases in noise levels (e.g., from on-campus stationary sources, New Hospital-related ambulance noise, and increases in off-site NHPH traffic). In all cases, noise impacts were mitigated to the extent feasible; however, the project and cumulative construction noise impacts (Impact NOI-1 and Impact C-NOI-1) were concluded to be significant and unavoidable.

With respect to commenter's statement that the New Hospital would create trash, as discussed in **Master Response 1: Non-CEQA Comments**, potential effects of a proposed project on the quality of life and related conditions, such as trash, in and of themselves, are not considered environmental impacts under CEQA. However, UCSF Parnassus Heights maintenance staff routinely collect and dispose of trash generated within the campus site, and this practice would continue with the proposed NHPH. Please also see the NHPH Initial Study included in Appendix A in the NHPH Draft EIR, which addressed the impact of the NHPH project on public services, including solid waste, and determined that these effects would be less than significant.

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8.4.2.4 Draft EIR Public Hearing Transcript

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PUBLIC HEARING ON THE

DRAFT ENVIRONMENTAL IMPACT REPORT

FOR THE

UCSF NEW HOSPITAL AT PARNASSUS HEIGHTS

WEDNESDAY, JANUARY 19, 2022

VIA ZOOM WEB CONFERENCING PLATFORM

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REPORTED VIA ZOOM WEB CONFERENCING
BY: DEBORAH FUQUA, CSR #12948
CERTIFIED STENOGRAPHIC REPORTER

APPEARANCES

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ALICIA MURASAKI, Assistant Vice Chancellor - Campus Planning

PAUL TAKAYAMA, Assistant Vice Chancellor - Community & Government Relations

DIANE WONG, Principal Planner, Environmental Quality Act Coordinator

ABBY ELLIS, Associate Director, Community Relations

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Wednesday, January 19, 2022 6:00 p.m.

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P R O C E E D I N G S

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ABBY ELLIS: All right. It's 6:00 o'clock, everyone. Thank you for joining us for tonight's public hearing on the Draft Environmental Impact Report for the proposed New Hospital at Parnassus Street. I'm Abby Ellis, Assistant Director of Community Relations with UCSF. We're just going to wait another minute or two for people to join the call, but we appreciate you all taking the time out of your evening to join us. And we'll go ahead and get started in just a couple minutes. Thank you.

(Pause in proceedings)

ABBY ELLIS: Hi, good evening to all those who just joined. You are at the public hearing on the Draft Environmental Impact Report for the New Hospital at Parnassus Heights or UCSF. We're just waiting a minute or two for other community members to join the call, and then we'll get started in the next minute or so. Thank you.

(Pause in proceedings)

ABBY ELLIS: Hi, everyone. Thanks for joining us tonight.

Val, will you go to the next slide? I think we should go ahead and get started.

So I'm Abby Ellis, Assistant Director of Community Relations with UCSF. You are at the Draft EIR hearing for New Hospital at Parnassus Heights. Before we get started, we just want to go through a couple Zoom housekeeping items, just to make sure everybody understands the process for how this will work, even though we've all been on Zoom calls for the better part of two years at this point.

So we'll be taking the public comment by raising your virtual hand by clicking the icon at the bottom of your screen that's labeled "raise hand." If you're on the phone, you can dial star 9.

Staff will send you a request to unmute when it's your turn to speak. Diane Wong will be helping to facilitate that. She'll read out the first few names to speak so you're prepared and then run through until there's no more hands raised. As it says in the purple box, commenters will be called on in the order of who raised their hand first. And don't lower your hand, as you will lose your place in the queue.

As a reminder, this meeting is being recorded for note-taking and follow-up purposes. A court reporter is on the line to prepare a transcript of the

proceedings.

Next slide, please. Great. Thank you. That's it from me. I'll hand it over to Alicia Murasaki now.

ALICIA MURASAKI: Good evening. Thank you for joining us tonight. Due to the Zoom format, I'm going to ask you to bear with me because I will be reading the contents of the slides so that those who do not have access to a computer screen or who have vision issues can also fully participate.

So UCSF is one of the ten universities of California campuses and the only one that's focused exclusively on health. Parnassus Heights is one of UCSF's major campus sites, and we have challenges there: aging buildings and infrastructure, regulatory and seismic compliance, building overcrowding, and lack of quality spaces. Parnassus Heights requires major renewal and investment in infrastructure and facilities.

We completed a comprehensive Parnassus Heights Plan to address these needs, and tonight, the New Hospital at Parnassus Heights has been analyzed in a separate project-specific environmental impact report. And tonight, we will be taking comments on the draft.

Next slide, please.

So the New Hospital is required to address critical seismic capacity and patient care issues. These include our patient census is at record highs; it is essential that we expand access to accommodate increasing patient demand.

For recruitment and retention: Providing quality facilities is critical to retaining and recruiting top clinicians, staff, researchers, and students.

The age of the campus: Moffitt Hospital was built in 1958. The facilities are outdated, inflexible, undersized, and clinically obsolete.

The state seismic law: Moffitt Hospital must be structurally retrofitted or decommissioned as an inpatient facility by the year 2030.

And quality: Investing in UCSF Health's future is critical to sustaining our public mission of top quality patient care, research, and education.

Next slide, please.

Here is a very high level timeline of the hospital project. You can see that we started with visioning in 19- -- not 19, sorry -- 2018. We are currently in the design phase, and we will be requesting Regental approval in mid 2022. You can see that we will be demolishing an existing building to

make way for a construction start in the year 2023. We expect to complete construction, testing, preoccupancy planning, and fit-up by 2029, 2030, with a grand opening planned for the year 2030. Following that, we will have some limited renovations in Moffitt and Long.

Next slide, please.

This slide is now an overview and timeline of the New Hospital at Parnassus Heights EIR. So we have, in October 2020 to October 2021, completed a series of public community meetings. On July 28th, 2021, the Notice Of Preparation and the Initial Study for the EIR was published. In August 17 -- on August 17th, the EIR scoping meeting was held. On December 16th, the New Hospital Draft EIR was published. And that brings us to today. January 19th, 2022, where we are holding our public hearing on the Draft EIR.

Our next steps -- and these dates are subject to change, but we are targeting -- well, this one won't change. February 14th, 2022 will be the end of the 60-day Draft EIR public comment period. And then in early 2022, we will be preparing the responses to all comments received. And in mid 2022, we will publish and certify the Final EIR as our plan.

Next slide, please.

So as a public hearing, the purpose is to

receive comments on this Draft EIR for the proposed New Hospital at Parnassus Heights project. Since this is not a community meeting to discuss the project, please limit your remarks and comments to the Draft EIR.

As required by the California Environmental Quality Act, UCSF will respond to all substantive comments in writing, and therefore, we will not respond verbally to comments tonight or engage in a dialog.

The next slide, please.

If you wish to speak, please raise your virtual hand. And for those on the phone only, press star 9 to raise your virtual hand. Each speaker will have two minutes to provide comments. If you speak, your comments will be transcribed, so you do not need to also send written comments. If you would like to provide comments on the Draft EIR in writing, all comments are due by 5:00 p.m. on February 14th, 2022.

I'd just like to highlight we do have a chat function for technical support, but any comments entered into the chat are not visible to the court reporter. So we really need you to speak or send in written comments.

And if we go to the next slide, you'll get to see where those written comments can happen. So to submit public comment, email written comments to

eir@ucsf.edu, or you can mail comments to Ms. Diane Wong at UCSF Campus Planning, Box 0287, 654 Minnesota Street, San Francisco, California 94143. Again, all comments must be received no later than February 14th, 2022.

And if you would like a paper copy of the Draft EIR, please call Campus Planning Office at number -- the phone number 415-502-5952. Again, that is 415-502-5952. You can find a Draft EIR electronic copy at tiny.ucsf.edu\hospitaldrafteir. There are no spaces in "hospitaldrafteir."

And the next slide, please.

So we do want you to stay involved, and there are some upcoming opportunities to engage in dialog with UCSF regarding the New Hospital at Parnassus Heights. So in the spring, which is right around the corner, the UCSF Parnassus Heights experience will include an in-person opportunity to view scale models of the design. In 2023, we will have the introduction of the project at UCSF's quarterly construction meetings, and that is an opportunity to understand and provide feedback on the proposed construction plans and impacts.

To keep informed when these events and meetings are scheduled, please sign up for our

listserve by e-mailing community.cgr@ucsf.edu. And that is community.cgr@ucsf.edu

And with that, I'm going to hand over the presentation to my colleague Diane Wong.

DIANE WONG: Thanks, Alicia.

Hi, everyone. I'm Diane Wong. I'm with the Campus Planning Office, and I am managing this Draft Environmental Impact Report process. We'll leave this slide up on the screen, and it's just a summation of what Alicia went over. And we'll have -- again, at the end of the presentation today, we'll have the contact information for added comment in writing.

So we'll start with the public comment now. I'm going to call out three names at a time. If you'd like to speak, please raise your digital hand. As Alicia mentioned, that's down on the reactions button; there's a way to click and raise your hand. So I will call on folks as do you that. I'll wait a second while you figure out how to do that.

And, again, folks will have two minutes to speak. During the last 30 seconds of that two minutes, you will see on the screen a count-down clock which will let you know you have 30 seconds remaining.

So would anyone like to speak? Please raise your digital hand at this time. And if you're calling

in, press star 9.

(Pause in proceedings)

DIANE WONG: I am not seeing any raised hands.

(Pause in proceedings)

DIANE WONG: I'll give it another minute. I'm not seeing any raised hands, so if you would like to speak, please do raise your hand.

PAUL TAKAYAMA: Diane, maybe it would be helpful if you would remind people where that raise-hand function is.

DIANE WONG: Yes. If you will -- you can see on the bottom of your screen, if you hover your cursor over the bottom there should be a reactions button there. If you click on that, there's a raise hand button. That will get you in the queue here.

So I'm seeing a message that someone's saying they don't think the raise hands function is enabled for this meeting. Is that right? Oh, okay. I'm seeing raised hands now.

Okay. Tes?

TES WELBORN: Yes. Regarding transportation, you're proposing to add a very large number of people to the very narrow Parnassus Heights street, narrow Parnassus Avenue, and with no additional transportation, no additional parking. The

PH-Welborn-1

transportation is a very key issue. Locating this hospital at Mission Bay would make a lot more sense for accessibility to the city. Thank you.

PH-Welborn-2

DIANE WONG: Thank you, Tes.

Are there any other folks who would like to speak? Please raise your hand.

(Unintelligible; unidentified speaker)

UNIDENTIFIED SPEAKER: Isn't that raise your hand?

DIANE WONG: Yes, we see it now.

Dorrie Huntington?

UNIDENTIFIED SPEAKER: Let me -- [unintelligible].

DIANE WONG: Dorrie, we can hear you now. So if you'd like to -- to go ahead and relay your comment.

UNIDENTIFIED SPEAKER: [Unintelligible] I think you can raise your hand there, if you want to ask questions.

UNIDENTIFIED SPEAKER: [Unintelligible] See raise hand? [Unintelligible] Your cursor [unintelligible].

UNIDENTIFIED SPEAKER: I see it.

DIANE WONG: Hi, Dorrie Huntington? You can go ahead and speak now.

UNIDENTIFIED SPEAKER: [Unintelligible]. Do

you have to unmute yourself?

DIANE WONG: Yeah, you're not muted. We can hear you.

UNIDENTIFIED SPEAKER: Where are the cars going to go? I mean, is this going to be a city with no cars?

PH-Unidentified-3

DORRIE HUNTINGTON: This is Dorrie. Can you hear me now?

DIANE WONG: We can hear you, yes.

DORRIE HUNTINGTON: Okay. So I was a member of the EIR CAG many, many years ago. I am a neighbor that lives on Frederick Street, directly across from Kezar Stadium. And a couple points I just want to make that -- just surrounding this meeting and other meetings that UCSF has had around the EIR and other development there is it's -- so many people that I've spoken to about this and several couple people in the park today that I've known that have been part of the committee is that UC will just do what they want to do, and that they have these meetings -- and I actually left that committee many years ago because I felt like, during that time, is that all the efforts that the UC makes in order to engage with the community, I have to tell you, a lot of the community just feels that they're just measures that they do to put it through a

PH-Huntington-4

process to, like, get community support -- or hearings because they need to do that.

But ultimately, I think that really people -- people feel powerless, that really -- it really doesn't matter. And so there's that's point that I want to make, just because it's a feedback that I also receive from people. So I'm representing other people also.

PH-Huntington-4 cont.

But then my other big concern, again, is the density, the parking. You know, I live across the street from Kezar Stadium, and -- where there's Monday parking. And right now, there's just people that just are lined up on the sidewalk, waiting to get full-day parking that are all coming out, ready to go to UCSF. And so, you know, it's definitely, definitely a negative impact on our community because you witness, you know, 25 cars lining up on a sidewalk in order to gain parking.

PH-Huntington-5

So that -- there are a couple of comments that I have -- I just felt like I needed to share. And I wish you all the best. I think a hospital -- people need hospitals. You do a great job as a university. But, again, I think this should be better placed in -- in Mission Bay.

PH-Huntington-6

DIANE WONG: Thank you for your comments.

DORRIE HUNTINGTON: You're welcome.

DIANE WONG: All right. Any other comments? Please raise your digital hand. There's a reaction button on the bottom of your screen, and if you click on that, there's another button to raise your hand.

Susheela Vasan?

SUSHEELA VASAN: Hi, yes. I'm a neighbor on Third Avenue, and I wanted to reiterate the comment about the density and the transportation. The traffic flow in this area and the limited public transportation just does not seem to have been addressed in your impact report. PH-Vasan-7

The other thing I wanted to ask about that I didn't see in the impact report is the shadow and the darkness that the -- you know, the higher building is going to project around the neighborhood. There was nothing that really talked about the -- and showed the impact of the shadow of the building on neighbor homes and yards. And so I would like you to try to provide that information in your -- in your reporting. PH-Vasan-8

And, you know, and UCSF is -- I also would have to say, reiterate the comment that the last speaker made that I've been to a number of these meetings, and it does feel like UCSF really isn't listening, that you're just checking the box to have these meetings, but you're not really addressing or PH-Vasan-9

considering the feedback that you're getting from the community.

DIANE WONG: Thank you. Next speaker is Matt Full [sic]. Matt, you can unmute yourself and speak.

MATT FULLER: Hi there. Can you here me?

DIANE WONG: We can hear you.

MATT FULLER: Great. My name is Matt Fuller. I am a property owner in the 1300 block of Third Avenue. I don't quite now how to file this complaint as a formal objection, but I would say that UCSF is the sociopathic neighbor. You have consistently negotiated in bad faith with this neighborhood that I have lived in for the past 20 years.

And as a university, you cannot even follow your own rules. I walk to the Starbucks two blocks away along Parnassus every day. And I see your police vehicles consistently parked in front of fire hydrants and blocking pedestrian view paths and making it dangerous and difficult as it exists today.

Part of the resolution of this was the development of the Mission Bay neighborhood. The City of San Francisco literally gave you an entire neighborhood, from scratch, to do anything you wanted with because we knew San Francisco was going to grow,

PH-Vasan-9 cont.

PH-Fuller-10

PH-Fuller-11

PH-Fuller-12

and we knew that Cole Valley and Parnassus Heights and the Inner Sunset would remain residential.

This hospital is a farce. It's out of place. And it is, once again, an enormous middle finger to the entire neighborhood. Thank you.

DIANE WONG: Thank you, Matt.

Would anyone else like to speak?

SEAN McGEEVER: Yes. I think I had my hand up.

DIANE WONG: Could you please identify yourself?

SEAN McGEEVER: Sean McGeever. Can you hear me?

DIANE WONG: Yes. Sean, could you please spell your name? I don't see your name.

SEAN McGEEVER: Well, it's -- first name is S-E-A-N, and the last name is McGever, M-C G-E-V-E-R.

DIANE WONG: Thank you.

SEAN McGEEVER: Yeah, my comments are -- I live on Carl Street, actually on the 400 block on Carl Street. So I live literally at the bottom of the hill from UCSF.

And you know, while I -- you know, UCSF is certainly a world class, you know -- you know, hospital and studying and all the rest. It seems to me that,

PH-Fuller-12 cont.

PH-Fuller-13

PH-McGeever-14

PH-McGeever-15

you know, if you build something that's 13 stories high, you're going to create -- you're going to block out the sun for people who live on Carl Street. That's number one.

Number two, I mean, this is a largely residential area. From a purely municipal planning point of view, it seems to me that, you know, the positioning of UCSF where it is right now is really out of whack with what has happened as far as residential living is concerned. You know, the fact, if you moved on to Mission Bay, seemed like -- seemed like that's the way you should be going as an institution.

The thing that -- if you take a look at California Pacific, California Pacific just -- just moved out of their -- you know, where they were on California Street, to a corner -- to two of the most busy corners in San Francisco, at Van Ness and Geary. And it would -- it would have seemed like, you know, a -- a location on the periphery away from residential area would be a much more appropriate place to move, you know, to actually move your whole hospital.

That -- those are my comments.

DIANE WONG: Thank you, Sean.

Are there any others who would like to speak? And, again, the reactions button on the bottom will

PH-McGeever-15 cont.

PH-McGeever-16

take you to a raise-hand button, and that will get you in the queue.

(Pause in proceedings)

DIANE WONG: All right. Well, I don't see any other hands raised, so we will close the public comment portion of this meeting -- oh, I'm sorry. We just got two hands.

Susheela, did you have another comment? You can unmute yourself.

SUSHEELA VASAN: Yes, I did have another comment -- actually, a question. I really haven't seen a traffic flow report from you guys. It wasn't really part of the EIR that I saw -- to really explain how you expect the traffic to flow in and out in that number of individuals, both patients and hospital workers, to be flowing in and out of this area, given the current transportation and parking situation. And I didn't see any incremental parking or transportation plans.

And maybe you guys have them, and it wasn't, you know, readily apparent in -- in the plans that I've seen to date. So I would like you guys to respond to that and to really provide a more detailed traffic flow information so that we can have really a better understanding of what you guys are anticipating the traffic to be and how you are planning to manage that.

PH-Vasan-17

DIANE WONG: Thank you, Susheela. There is a -- why don't we connect offline. We'll take that as a comment, that you wanted to have that ready available. But you and I can connect offline to talk about that.

SUSHEELA VASAN: Okay. Is there an actual plan that shows your estimated volume of traffic in and out and parking and a plan that shows how you are anticipating managing that increase? And if so, what is the -- the increase in volume that you're expecting?

PH-Vasan-18

DIANE WONG: There is information in the EIR. Today, we're just taking public comment. So you and I can connect offline on this.

Next speaker, Susan Maerki.

Susan, you can unmute yourself.

SUSAN MAERKI: I'm unmuted. Can you hear me?

DIANE WONG: You are. We can hear you now. Thank you.

SUSAN MAERKI: So a couple of things -- I'm not going to renegotiate or discuss the location of the hospital, a couple of things, though.

One, I do think the transportation demand management plan, it continues to be insufficient and not sufficiently aggressive. Even based on your own projections, we're seeing some slight -- you know, basically no movement on the public transportation

PH-Maerki-19

mode.

The -- to the extent there's a reduction in the drive-alone population you're projecting is going to be increased by Ubers and Lyfts and other cars kind of thing. So during the process, I really urge you to think about not just the federal transportation subsidies but to evaluate -- and I think I submitted the information on what Stanford had to do in terms of paying for passes and to really increase the use of public transportation and reduce the use of single-occupancy vehicles.

PH-Maerki-19 cont.

The other -- you know, I -- the other thing, and this is more of a little sort of a nitty gritty. You talk about what you call the excess space from reducing the size of the hospital in the various iterations. But you're proposing to add one to two stories to other plans. And I think that the -- the cumulative effect in some of your scenarios and visualizations need to show those one or two stories on the research and academic building or the other buildings where you might likely add those things because I don't think that this is giving a -- a sufficient cumulative impact, and particularly if you put it on top of the research and academic buildings, the impact in the next ten years. Thank you.

PH-Maerki-20

DIANE WONG: Thank you, Susan.

All right. Any other speakers?

(No response)

DIANE WONG: Okay. Seeing no hands raised, we will go ahead and close out the public comment portion of the meeting. And just as a reminder, if you would like to submit written comments, you can do so by sending an email to eir@ucsf.edu. Or you can send me a letter to the address indicated on the screen there. And, again, we must receive comments no later than February 14th, 2022.

If you'd like a paper copy of Draft EIR, please call me at 415-502-5952. And again, the electronic copy of the Draft EIR can be found at tiny.ucsf.edu/hospitaldrafteir.

That concludes our public meeting. Thank you, everyone, and have a great evening.

(Whereupon, the proceedings concluded at 6:31 p.m.)

STATE OF CALIFORNIA)
) ss.
COUNTY OF MARIN)

I, DEBORAH FUQUA, a Certified Shorthand Reporter of the State of California, do hereby certify that the foregoing proceedings were reported via Zoom web conferencing by me, a disinterested person, and thereafter transcribed under my direction into typewriting and which typewriting is a true and correct transcription of said proceedings.

I further certify that I am not of counsel or attorney for either or any of the parties in the foregoing proceeding and caption named, nor in any way interested in the outcome of the cause named in said caption.

Dated the 8th day of February, 2022.

DEBORAH FUQUA

CSR NO. 12948

Responses to Comments from the Public Hearing Transcript

PH-Welborn-1 The commenter indicates that regarding transportation, UCSF is proposing a large number of people to the very narrow Parnassus Heights street, and with no additional transportation, and no additional parking. Please see response to Comment I-Kushner-5.

PH-Welborn-2 The commenter indicates that locating the proposed New Hospital in Mission Bay would make more sense for accessibility to the City. Please see NHPH Draft EIR Section 6.4.1 which explains that while the University did consider locating the proposed New Hospital at the Mission Bay campus site, it determined that such an alternative would not meet some of the key objectives of the proposed project, and while it would reduce impacts at the Parnassus Heights campus site, it would result in similar impacts at the Mission Bay site as well as the additional traffic and air quality impacts from travel between the two campus sites. Based on this, the University did not carry the alternative forth for detailed evaluation.

PH-Unidentified-3 The commenter inquires where are the cars going to go; and is this going to be a city with no cars. This comment does not address the adequacy of the NHPH Draft EIR; consequently, as explained in **Master Response 1: Non-CEQA Comments,** no response is required.

PH-Huntington-4 The commenters expresses concern over the community outreach that has occurred for the project. Please see **Master Response 3: Community Outreach**.

PH-Huntington-5 The commenter expresses concern over parking, and indicates that currently, in the vicinity of Kezar Stadium there are people that line up to get full day parking, and then go to UCSF. With respect to parking, as discussed in Chapter 1, *Introduction*, the NHPH meets the criteria of Statute Section 21099(d) which states that parking impacts of an employment center project on an infill site located within a transit priority area shall not be considered significant impacts on the environment. As such, potential impacts of the NHPH on parking activity was not determined to be an impact under CEQA.

PH-Huntington-6 The commenter indicates that the New Hospital should be placed in Mission Bay. Please see response to Comment PH-Welborn-2, above.

PH-Vasan-7 The commenter indicates the traffic flow in the area and the limited public transportation does not seem to be addressed in the NHPH Draft EIR. With respect to traffic flow in the area, please see response to Comment PH-Vasan-17 to PH-Vasan-18, below.

With respect to transit, the NHPH Draft EIR Impact TRANS-1 finds that the New Hospital would not conflict with the UC Plans and policies that address transit, including the 2014 LRDP; and furthermore, would not conflict with San Francisco's Transit First Policy. While UC does not consider effects on transit demand to be a significant impact under CEQA, for informational purposes, Appendix TRANS in the NHPH Draft EIR provided a qualitative discussion of potential effects on transit operations.

PH-Vasan-8 The commenter inquires about shadows that would be created by the New Hospital, including on neighbors' homes and yards. With respect to shadow creation, as explained in Impact AES-5 in the NHPH Draft EIR, the shadow analysis is limited to whether the NHPH would cast new shadow on publicly accessible open spaces in the vicinity of the campus site and whether this new shadow would adversely affect the use and enjoyment of these open spaces. Accordingly, the analysis assesses shadow impacts of the NHPH on three City parks (Golden Gate Park, Richard Gamble Memorial Park, and Grattan Playground), and on two schoolyards that participate in the Shared Schoolyard Project and provide public access on weekends (Independence High School and Grattan Elementary School). The Interior Greenbelt located adjacent to and east of the Reserve, and the Reserve itself located within the campus site, were also studied for this analysis. As analyzed in Impact AES-5, implementation of the NHPH would not adversely or substantially affect the use and enjoyment of these open spaces, and the impact was therefore concluded to be less than significant. Impact C-AES-4 determined that implementation of the NHPH in combination with cumulative projects reached a similar conclusion, and consequently, the cumulative shadow impact would also be less than significant.

PH-Vasan-9 The commenters expresses concern over the community outreach that has occurred for the project. Please see **Master Response 3: Community Outreach**.

PH-Fuller-10 The commenter expresses personal opinions about the project and UCSF. These comments do not address the adequacy of the NHPH Draft EIR; consequently, as explained in **Master Response 1: Non-CEQA Comments**, no response is required. However, the comment has been noted and will be forwarded to decision-makers.

PH-Fuller-11 The commenter expresses personal opinions about existing parking of UCSF police vehicles. These comments do not address the adequacy of the NHPH Draft EIR; consequently, as explained in **Master Response 1**, no response is required. However, the comment has been noted and will be forwarded to decision-makers.

PH-Fuller-12 The commenter indicates the Mission Bay campus site is more appropriate for UCSF growth than neighborhoods on the west side of the City. Please see response to Comment PH-Welborn-2, above.

PH-Fuller-13 The commenter expresses personal opinions about the project. These comments do not address the adequacy of the NHPH Draft EIR; consequently, as explained in **Master Response 1**, no response is required. However, the comment has been noted and will be forwarded to decision-makers.

PH-McGeever-14 The commenter provides background information that does not address the adequacy of the Draft EIR; consequently, no response is required.

PH-McGeever-15 The commenter indicates that the proposed New Hospital would block out the sun for people that live on Carl Street. Please see response to Comment PH-Vasan-8, above.

PH-McGeever-16 The commenter indicates the Mission Bay campus site would be a more appropriate location for the NHPH project. Please see response to Comment PH-Welborn-2, above. The commenter also indicates that California Pacific Medical Center located on Van Ness and Geary, located away from residential areas, is an example of appropriate location for a hospital. The comment is noted. The NHPH Draft EIR, Chapter 6, *Alternatives* contains a detailed analysis of all potential alternatives to the proposed project that would considered in the EIR.

PH-Vasan-17 to PH-Vasan-18

The commenter requests additional information about how new vehicle traffic generated by the NHPH project would flow in and out of the study area and how this new traffic would be managed.

The 'Existing Plus CPHP' and 'Cumulative' intersection volumes are shown on Figures 3 and 6 (page 9 and 17) of the CPHP Final EIR Transportation Appendix, respectively. These traffic volumes represent an estimate of the amount of traffic that will flow through study area intersections during a typical weekday PM peak hour (when the transportation network is most used) with the addition and occupation of the CPHP if it were to occur in the near term ('Existing plus Project') and longer term ('Cumulative'). As shown in Table 4.13-13 of the NHPH Draft EIR, the 'Existing' PM peak hour vehicle trips generated by the Parnassus Heights campus is 1,800. The NHPH is projected to add 300 vehicle trips during this period, with another 900 vehicle trips added by the full buildout and implementation of the CPHP by the 'Cumulative' scenario. The vehicle traffic generated by the NHPH project was analyzed as part of the NHPH Draft EIR and was not determined to be an impact under CEQA.

As described on p 4.13-6 of the NHPH Draft EIR, UCSF is committed to monitoring the number and classification (vehicle type, e.g., private passenger vehicle, taxi, parcel/mail delivery, etc.) of vehicles at key gateways of the Parnassus Heights campus site every two years as part of the Measurement and Accountability section (4.6) of the 2014 Long Range Development Plan (LRDP), as amended. These monitoring results have been shared with the community at regular two-year intervals beginning in 2016.

PH-Maerki-19 The commenter assets that the transportation demand management plan is insufficient and not insufficiently aggressive, including as it relates to public transportation. The commenter urges UCSF to think about not just the federal transportation subsidies and increase use of public transportation and reduce use of single-occupancy vehicles.

Please see responses to Comments I-Maerki-6 to I-Maerki-7.

PH-Maerki-20 The commenter refers to the building space that would be rendered surplus due to the reduction of the hospital program and assumed to be assigned to other buildings on the campus site during the CPHP Future Phase (described in Chapter 3, *Project Description*, on page 3-7). The commenter indicates that some of the scenarios and visualizations need to show that additional development where it is likely to be added.

As explained in Section 4.0, *Introduction to Environmental Analysis*, page 4.0-8, under the NHPH, the size of the proposed New Hospital would be reduced from that envisioned under the CPHP, and Moffitt and Long Hospitals would increase slightly in size. For purposes of this EIR, the building space [up to about 40,500 gross square feet (gsf)] authorized through 2014 LRDP Amendment No. 7 that would be rendered surplus due to the net reduction of the hospital program is assumed to be assigned to other buildings on the campus site during the CPHP Future Phase. This would result in one to two additional building floors potentially to be added to the planned Millberry Union New Towers, and to research buildings planned immediately south and west of the planned RAB. Please note that none of the CPHP Future Phase buildings have been designed yet. The cumulative impact analysis in this Draft EIR accounts for this change in the Future Phase development under the CPHP.

Accordingly, this reassigned development was accounted for in the 3D model for the CPHP buildout scenario that was used as to basis to develop the cumulative visual simulations, as well as assess cumulative shadow and wind impacts in the NHPH Draft EIR.

8.5 Revisions to the Draft EIR

8.5.1 Overview

This chapter presents revisions to the text, tables and figures to the Draft EIR. These revisions include both (1) revisions made in response to comments on the Draft EIR, as well as (2) UCSF staff-initiated text changes to correct minor inconsistencies, to add minor updates to information or clarification related to the NHPH, and to provide updated information where applicable. None of the revisions or corrections in this chapter substantially change the analysis and conclusions presented in the Draft EIR.

The chapter includes all revisions to the Draft EIR (see Section 8.5.2) in the sequential order that they appear in that document. Preceding each revision is a brief explanation for the text change, and the section/page number in the Draft EIR where the revision occurs. Deletions in text and tables are shown in strikethrough (~~strikethrough~~) and new text is shown in underline (<u>underline</u>). The same revisions presented in this chapter are also incorporated in the consolidated Draft EIR in Volume 1 of this Final EIR, which includes the full text of the integrated Draft EIR, as revised.

8.5.2 Revisions to the Draft EIR

Chapter 1, Introduction

UCSF has determined that the minor encroachment for the proposed medical gas storage tanks would be slightly larger than that reported in the Draft EIR (approximately 0.21 acres instead of 0.15 acres), however, this change would not affect the overall minimum acreage of the Reserve (61 acres). Draft EIR Chapter 1, *Introduction*, page 1-4, first full paragraph, fourth sentence is revised as a staff-initiated change, as follows:

> However, the related improvement for the proposed medical gas storage tanks would result in a minor encroachment into the Reserve ~~(though to a lesser extent than the New Hospital encroachment into the Reserve that was approved under 2014 LRDP Amendment #7)~~.

Draft EIR Chapter 2, Summary

Draft EIR Chapter 2, *Summary*, Table 2-2, pages 2-18 to 2-20, third column, NHPH Mitigation Measure GHG-1 is revised as a staff-initiated change, as follows:

> **NHPH Mitigation Measure GHG-1: Monitor emissions annually and acquire carbon offset credits in conformance with CARB guidance, prioritizing local and in-State offsets to achieve and maintain carbon neutrality for the NHPH as part of campus-wide emissions.**
>
> As part of this mitigation measure, UCSF is making the following separate, though overlapping, GHG emission reduction commitments: (1) As a CARB-covered entity, UCSF will maintain compliance with CARB's cap and trade program; (2) Per existing UC Policy, UCSF's Scope 1 and Scope 2 GHG emissions shall, commencing in 2025, be entirely

carbon neutral; (3) Also per existing UC Policy, commencing in 2025, UCSF's Scope 1 and Scope 2 emissions shall be voluntarily offset while Scope 3 emissions from commuters and air travel shall be voluntarily offset by 2050; and (4) UCSF's total GHG operational emissions from all Scope 1, 2, and 3 sources (as defined in this EIR) shall not exceed the Parnassus Heights campus's baseline emissions from these sources in 2019. Each of these commitments is described in more detail below.

***Continued Compliance with CARB's Cap and Trade Program*:** Any carbon offset credits purchased for the purpose of compliance with CARB's cap and trade program shall be purchased from an accredited carbon credit market. Such offset credits (or California Carbon Offsets) shall be registered with, and retired[3] by an Offset Project Registry, as defined in 17 California Code of Regulations § 95802(a), approved by the California Air Resources Board such as, but not limited to, Climate Action Reserve, American Carbon Registry or Verra (formerly Verified Carbon Standard). In order to demonstrate that the carbon offset credits provided are real, permanent, additional, quantifiable, verifiable, and enforceable, as those terms are defined in 17 California Code of Regulations § 95802(a), UCSF shall document in its annual report: (i) the protocol used to develop those credits, and (ii) the third-party verification report concerning those credits. As and when the credits are retired, UCSF shall document in its annual report the unique serial numbers of those credits showing that they have been retired.

***Compliance with UC Policy - Offsets for Emissions from Commuters and Air Travel*:** Compliance with UC's policies for carbon neutrality from specific Scope 3 sources (as defined by Second Nature's Carbon Commitment) by 2050 or sooner as required by UC's Policy on Sustainable Practices (UCES, 2020). Neutrality may be achieved through reductions in direct emissions, ~~the purchase of renewable electricity and possibly biomethane,~~ and the purchase of carbon offset credits. UCSF will purchase voluntary carbon offset credits as the final action to reach the GHG emission reduction targets. As part of the UC Carbon Neutrality Initiative, UC Sustainable Practices Policy has been updated and internal guidelines have been developed to ensure that only high-quality voluntary carbon offsets are purchased by UC and any use of offsets for this purpose will result in additional, verified GHG emissions reductions from actions that align, as much as possible, with UC's research, teaching, and public service mission. Specifically, any voluntary carbon offset credits used by UCSF to mitigate Scope 3 GHG emissions will:

1. Prioritize local (within the air district) and in-state offset credits over in-nation offset credits. Offset credits shall be third-party verified by a major registry recognized by CARB such as CAR (Climate Action Reserve) or equivalent and will also subjected to an internal peer review process. If sufficient local and in-state offset credits are not available, UCSF will purchase CARB conforming or equivalent national offset credits registered with an approved registry and which meet UC criteria for high-quality offsets.

2. Be reported publicly and tracked through the Climate Registry (TCR) as required by UC policy. TCR is a non-profit organization governed by U.S. states and Canadian provinces and territories. UCSF's TCR reports will be third-party verified and posted publicly.

[3] When Climate Reserve Tonnes (CRTs) are transferred to a retirement account in the Reserve System, they are considered retired. Retirement accounts are permanent and locked to prevent a retired CRT from being transferred again. CRTs are retired when they have been used to offset an equivalent ton of emissions or have been removed from further transactions on behalf of the environment.

Compliance with UC Policy – Carbon Neutrality: Ensure achievement of net zero greenhouse gas emissions from its buildings and vehicle fleet by 2025. For purposes of this section, campuses shall include their related health location for all goals. GHG emissions reduction goals pertain to emissions of the six Kyoto greenhouse gasses[4] originating from all Scope 1 and Scope 2 sources as specified by the Climate Registry, and from Scope 3 emissions as specified by Second Nature's Carbon Commitment, which includes air travel paid through the institution, and commuting to and from campus by students, faculty and other academic appointees, and staff.

***Commitment to control Parnassus Heights Annual Emissions to not exceed existing baseline*:** UCSF shall monitor GHG operational emissions from all Scope 1, 2 and 3 sources annually. Upon the completion and occupancy of the NHPH, inclusive of the related improvements, in 2033, the estimated annual emissions shall be compared to the campus site year 2019 baseline of 127,083 MT CO_2e per year to determine whether the emissions have increased above the baseline level. For the identified amount of exceedance of the performance standard, UCSF shall purchase carbon offset credits sufficient to maintain carbon neutrality. These offset credits shall be purchased for the types of Scope 1 and Scope 2 emissions that are already reported to and verified by a third-party verification body annually, as well as for Scope 3 emissions from patient and visitor vehicle trips, indirect emissions from water and wastewater demand, and solid waste emissions, all of which are included in the EIR analysis above as required by CEQA.

Carbon offset credits used for this purpose shall originate from a voluntary carbon credit registry that TCR recognizes, such as: CAR, ACR, or Verra (other registries are also applicable). Offset credits in this case shall be registered, transferred, and retired at such registries. The offsets will also be subjected to an internal UC peer review process. The protocols of each registry, and UC own internal screens and criteria, shall be used to demonstrate that the carbon offset credits provided are real, permanent, additional, and have been independently verified as adhering to its applicable project protocols. For this purpose, local (within the air district) and in-state carbon offset credits shall be prioritized over in-nation offset credits. If sufficient local and in-state offset credits are not available, UCSF will purchase CARB conforming or equivalent national offset credits registered with an approved registry and which meet UC criteria for high-quality offsets. As and when the credits are retired, UCSF shall document in its annual report the unique identifier of those credits showing that they have been retired and accepted by TCR.

[4] The six greenhouse gasses identified in the Kyoto Protocol are carbon dioxide, methane, nitrous oxide, sulfur hexafluoride, hydrofluorocarbons, and perfluorocarbons.

Draft EIR Chapter 2, *Summary*, Table 2-2, page 2-23, third column, NHPH Mitigation Measure NOI-1a, second bullet is revised in response to Comment I-Beaton-5, as follows:

- Impact tools (e.g., jack hammers, pavement breakers, and rock drills) used for construction shall be hydraulically or electrically powered wherever possible to avoid noise associated with compressed air exhaust from pneumatically powered tools. If the contractor deems the~~Where~~ use of pneumatic tools to be~~is~~ unavoidable, the contractor shall prepare a mitigation measure variance explaining the conditions that make the exemption necessary and submit it to the UCSF Project Manager, and an exhaust muffler on the compressed air exhaust shall be used; this muffler can lower noise levels from the exhaust by up to about 10 dBA. External jackets on the tools

themselves shall be used where feasible; this could achieve a reduction of 5 dBA. Quieter procedures, such as use of drills rather than impact tools, shall be used unless the contractor, based on professional judgment, deems these alternative methods inappropriate for conditions encountered or reasonable allocation of manpower, whereby the contractor shall prepare a mitigation measure variance explaining the conditions that make the exemption necessary and submit it to the UCSF Project Manager~~where feasible~~.

Draft EIR Chapter 3, Project Description

UCSF has determined that the minor encroachment for the proposed medical gas storage tanks would be slightly larger than that reported in the Draft EIR (approximately 0.21 acres instead of 0.15 acres), however, this change would not affect the overall minimum acreage of the Reserve (61 acres). Draft EIR Chapter 3, *Project Description*, page 3-8, first paragraph, fourth sentence is revised as a staff-initiated change, as follows:

> However, the related improvement for the proposed medical gas storage tanks would result in a minor encroachment into the Reserve as described below ~~(though to a lesser extent than the New Hospital encroachment into the Reserve that was approved under 2014 LRDP Amendment #7)~~.

Relatedly, Draft EIR Chapter 3, *Project Description*, page 3-49, second to last paragraph, last sentence is revised as a staff-initiated change, as follows:

> These areas are about the same size, such that the Reserve would be maintained at a minimum of 61 acres.

Draft EIR Section 4.2, Air Quality

Draft EIR Section 4.2, *Air Quality*, Impact AIR-1, page 4.2-27, first paragraph, last sentence is revised in response to Comment A-SFP-6, to remove reference to the City's Clean Construction Ordinance, as follows:

> Any improvements that would be constructed outside the campus site boundary, such as the proposed Parnassus Avenue bridge and tunnel, may involve the cooperation of the City of San Francisco ~~and, as public works projects, would be subject to the City of San Francisco's Clean Construction Ordinance~~.

Draft EIR Section 4.4, Cultural Resources

Draft EIR Section 4.4, *Cultural Resources*, Impact C-CUL-1, page 4.4-14, fifth paragraph, first sentence is revised as a staff-initiated change, as follows:

> The result of all past, present and reasonably foreseeable future projects would result in a cumulatively ~~considerable~~ significant impact on historical resources.

Draft EIR Section 4.7, Greenhouse Gas Emissions

Draft EIR Section 4.7, *Greenhouse Gas Emissions*, pages 4.7-38 to 4.7-40, NHPH Mitigation Measure GHG-1 is revised as a staff-initiated change, as follows:

> **NHPH Mitigation Measure GHG-1: Monitor emissions annually and acquire carbon offset credits in conformance with CARB guidance, prioritizing local and in-State offsets to achieve and maintain carbon neutrality for the NHPH as part of campus-wide emissions.**
>
> As part of this mitigation measure, UCSF is making the following separate, though overlapping, GHG emission reduction commitments: (1) As a CARB-covered entity, UCSF will maintain compliance with CARB's cap and trade program; (2) Per existing UC Policy, UCSF's Scope 1 and Scope 2 GHG emissions shall, commencing in 2025, be entirely carbon neutral; (3) Also per existing UC Policy, commencing in 2025, UCSF's Scope 1 and Scope 2 emissions shall be voluntarily offset while Scope 3 emissions from commuters and air travel shall be voluntarily offset by 2050; and (4) UCSF's total GHG operational emissions from all Scope 1, 2, and 3 sources (as defined in this EIR) shall not exceed the Parnassus Heights campus's baseline emissions from these sources in 2019. Each of these commitments is described in more detail below.
>
> ***Continued Compliance with CARB's Cap and Trade Program*:** Any carbon offset credits purchased for the purpose of compliance with CARB's cap and trade program shall be purchased from an accredited carbon credit market. Such offset credits (or California Carbon Offsets) shall be registered with, and retired[22] by an Offset Project Registry, as defined in 17 California Code of Regulations § 95802(a), approved by the California Air Resources Board such as, but not limited to, Climate Action Reserve, American Carbon Registry or Verra (formerly Verified Carbon Standard). In order to demonstrate that the carbon offset credits provided are real, permanent, additional, quantifiable, verifiable, and enforceable, as those terms are defined in 17 California Code of Regulations § 95802(a), UCSF shall document in its annual report: (i) the protocol used to develop those credits, and (ii) the third-party verification report concerning those credits. As and when the credits are retired, UCSF shall document in its annual report the unique serial numbers of those credits showing that they have been retired.
>
> ***Compliance with UC Policy - Offsets for Emissions from Commuters and Air Travel*:** Compliance with UC's policies for carbon neutrality from specific Scope 3 sources (as defined by Second Nature's Carbon Commitment) by 2050 or sooner as required by UC's Policy on Sustainable Practices (UCES, 2020). Neutrality may be achieved through reductions in direct emissions, ~~the purchase of renewable electricity and possibly biomethane,~~ and the purchase of carbon offset credits. UCSF will purchase voluntary carbon offset credits as the final action to reach the GHG emission reduction targets. As part of the UC Carbon Neutrality Initiative, UC Sustainable Practices Policy has been updated and internal guidelines have been developed to ensure that only high-quality voluntary carbon offsets are purchased by UC and any use of offsets for this purpose will result in additional, verified GHG emissions reductions from actions that align, as much as possible, with UC's research, teaching, and public service mission. Specifically, any voluntary carbon offset credits used by UCSF to mitigate Scope 3 GHG emissions will:

[22] When Climate Reserve Tonnes (CRTs) are transferred to a retirement account in the Reserve System, they are considered retired. Retirement accounts are permanent and locked to prevent a retired CRT from being transferred again. CRTs are retired when they have been used to offset an equivalent ton of emissions or have been removed from further transactions on behalf of the environment.

1. Prioritize local (within the air district) and in-state offset credits over in-nation offset credits. Offset credits shall be third-party verified by a major registry recognized by CARB such as CAR (Climate Action Reserve) or equivalent and will also subjected to an internal peer review process. If sufficient local and in-state offset credits are not available, UCSF will purchase CARB conforming or equivalent national offset credits registered with an approved registry and which meet UC criteria for high-quality offsets.

2. Be reported publicly and tracked through the Climate Registry (TCR) as required by UC policy. TCR is a non-profit organization governed by U.S. states and Canadian provinces and territories. UCSF's TCR reports will be third-party verified and posted publicly.

Compliance with UC Policy – Carbon Neutrality: Ensure achievement of net zero greenhouse gas emissions from its buildings and vehicle fleet by 2025. For purposes of this section, campuses shall include their related health location for all goals. GHG emissions reduction goals pertain to emissions of the six Kyoto greenhouse gasses[23] originating from all Scope 1 and Scope 2 sources as specified by the Climate Registry, and from Scope 3 emissions as specified by Second Nature's Carbon Commitment, which includes air travel paid through the institution, and commuting to and from campus by students, faculty and other academic appointees, and staff.

***Commitment to control Parnassus Heights Annual Emissions to not exceed existing baseline*:** UCSF shall monitor GHG operational emissions from all Scope 1, 2 and 3 sources annually. Upon the completion and occupancy of the NHPH, inclusive of the related improvements, in 2033, the estimated annual emissions shall be compared to the campus site year 2019 baseline of 127,083 MT CO_2e per year to determine whether the emissions have increased above the baseline level. For the identified amount of exceedance of the performance standard, UCSF shall purchase carbon offset credits sufficient to maintain carbon neutrality. These offset credits shall be purchased for the types of Scope 1 and Scope 2 emissions that are already reported to and verified by a third-party verification body annually, as well as for Scope 3 emissions from patient and visitor vehicle trips, indirect emissions from water and wastewater demand, and solid waste emissions, all of which are included in the EIR analysis above as required by CEQA.

Carbon offset credits used for this purpose shall originate from a voluntary carbon credit registry that TCR recognizes, such as: CAR, ACR, or Verra (other registries are also applicable). Offset credits in this case shall be registered, transferred, and retired at such registries. The offsets will also be subjected to an internal UC peer review process. The protocols of each registry, and UC own internal screens and criteria, shall be used to demonstrate that the carbon offset credits provided are real, permanent, additional, and have been independently verified as adhering to its applicable project protocols. For this purpose, local (within the air district) and in-state carbon offset credits shall be prioritized over in-nation offset credits. If sufficient local and in-state offset credits are not available, UCSF will purchase CARB conforming or equivalent national offset credits registered with an approved registry and which meet UC criteria for high-quality offsets. As and when the credits are retired, UCSF shall document in its annual report the unique identifier of those credits showing that they have been retired and accepted by TCR.

[23] The six greenhouse gasses identified in the Kyoto Protocol are carbon dioxide, methane, nitrous oxide, sulfur hexafluoride, hydrofluorocarbons, and perfluorocarbons.

Draft EIR Section 4.11, Noise and Vibration

Draft EIR Section 4.11, *Noise and Vibration*, NHPH Mitigation Measure NOI-1a, page 4.11-21, second bullet is revised in response to Comment I-Beaton-5, as follows:

- Impact tools (e.g., jack hammers, pavement breakers, and rock drills) used for construction shall be hydraulically or electrically powered wherever possible to avoid noise associated with compressed air exhaust from pneumatically powered tools. If the contractor deems the~~Where~~ use of pneumatic tools to be~~is~~ unavoidable, the contractor shall prepare a mitigation measure variance explaining the conditions that make the exemption necessary and submit it to the UCSF Project Manager, and an exhaust muffler on the compressed air exhaust shall be used; this muffler can lower noise levels from the exhaust by up to about 10 dBA. External jackets on the tools themselves shall be used where feasible; this could achieve a reduction of 5 dBA. Quieter procedures, such as use of drills rather than impact tools, shall be used unless the contractor, based on professional judgment, deems these alternative methods inappropriate for conditions encountered or reasonable allocation of manpower, whereby the contractor shall prepare a mitigation measure variance explaining the conditions that make the exemption necessary and submit it to the UCSF Project Manager~~where feasible~~.

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CHAPTER 9
Mitigation Monitoring and Reporting Program

9.1 Introduction

When approving projects with mitigation measures that if implemented would avoid or lessen significant impacts, the California Environmental Quality Act (CEQA) requires public agencies to adopt monitoring and reporting programs or conditions of project approval to mitigate or avoid the identified significant effects (Public Resources Code Section 21081.6(a)(1)). A public agency adopting measures to mitigate or avoid the significant impacts of a proposed project is required to ensure that the measures are fully enforceable, through permit conditions, agreements, or other means (Public Resources Code Section 21081.6(b)). The mitigation measures required by a public agency to reduce or avoid significant project impacts not incorporated into the design or program for the project may be made conditions of project approval as set forth in a Mitigation Monitoring and Reporting Program (MMRP). The program must be designed to ensure project compliance with mitigation measures during NHPH implementation.

The MMRP includes the mitigation measures identified in the NHPH EIR which are required to address the significant impacts associated with the proposed NHPH. The required mitigation measures are summarized in this program; the full text of the impact analysis and mitigation measures are presented in the Final EIR.

9.2 Format

The MMRP is organized in a table format (see Table 9-1), keyed to each significant impact and each mitigation measure. Only mitigation measures adopted to address significant impacts are included in this program. Each mitigation measure is set out in full, followed by a tabular summary of monitoring requirements. The column headings in the tables are defined as follows:

- **Environmental Impact:** This column presents the environmental impacts identified in the EIR.
- **Mitigation Measures:** This column identifies the mitigation measures associated with the impacts identified in the EIR.
- **Implementation Procedure:** This column identifies the procedure for implementing each mitigation measure.
- **Responsible Unit:** This column contains an assignment of responsibility for the monitoring and reporting tasks.

- **Report Mechanism:** This column refers to the outcome from implementing the mitigation measure.

9.3 Enforcement

If the proposed NHPH is approved, the MMRP would be adopted by the Regents. Therefore, all mitigation measures for significant impacts must be carried out in order to fulfill the requirements of approval. A number of the mitigation measures would be implemented during the course of the development review process. These measures would be checked on plans, in reports, and in the field prior to construction. Most of the remaining mitigation measures would be implemented during the construction or NHPH implementation phase.

TABLE 9-1
SUMMARY OF NHPH IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Implementation Procedure	Responsible Unit	Report Mechanism
EIR Section 4.1 Aesthetics, Wind, and Shadow				
Impact AES-3: The NHPH would create a new source of substantial light or glare which would adversely affect daytime or nighttime views in the area.	**NHPH Mitigation Measure AES-3: Minimize light and glare resulting from new development.** Light and glare from new development shall be minimized through use of landscaping materials and choice of primary facade materials. Design standards and guidelines to minimize light and glare shall be adopted for the new development, including: • Reflective metal walls and mirrored glass walls shall not be used as primary building materials for facades. • Installation of illuminated building signage shall strive to be consistent with UCSF design guidelines and/or City Planning Code sign standards for illumination. • Exterior light fixtures shall be configured to emphasize close spacing and lower intensity light. Light fixtures shall use luminaries that do not direct the cone of light towards off-campus structures. • New above-ground tanks shall be painted so as to not contain reflective surfaces.	Issue instructions to design teams to incorporate design standards in all project plans and designs. Require architects and design professionals to document how design standards are addressed and incorporated. Review project plans to ensure that such features have been incorporated in the design to address the impacts.	UCSF Project Manager and Design Teams	Ensure project incorporates design standards prior to final project approval. After construction, the Project Manager shall provide written verification to the Monitor that design standards have been incorporated to address the impacts.
Impact AES-4: Implementation of the NHPH would potentially create wind hazards in publicly accessible areas of substantial pedestrian use.	**NHPH Mitigation Measure AES-4: Implement Wind Mitigation and Safety Measures.** Prior to project construction, UCSF shall engage a qualified wind consultant to identify potential further feasible design alterations to the New Hospital and to evaluate potential other wind reduction measures, such as wind screens, with the goal of reducing the number of hours by which wind speeds on Parnassus Avenue exceed the City of San Francisco's pedestrian wind hazard criterion, without increasing the total number of test point locations exceeding the wind hazard criterion. The ultimate intent is to eliminate any wind hazard exceedance on Parnassus Avenue in the vicinity of the New Hospital in the Existing plus NHPH scenario without unduly burdening the New Hospital design program in a manner that would adversely affect the building's intended function. Prior to project construction, UCSF shall engage a qualified wind consultant to identify potential further feasible design alterations to the New Hospital and to evaluate potential other wind reduction measures, such as wind screens, with the goal of reducing the number of hours by which wind speeds on Parnassus Avenue exceed the City of San Francisco's	Issue instructions to alert the architect and design team that UCSF will engage, or require the design team to engage, a qualified wind consultant to evaluate the proposed New Hospital building design. Require documentation of the findings of all wind consultation and testing, where deemed necessary, and proposed wind-reducing measures. Review project plans to ensure that necessary wind-reducing features have been incorporated in the design. If determined feasible by the wind consultant and by the UCSF chancellor or the chancellor's designee, in consultation with the NHPH design team.	UCSF Project Manager and Design Teams	Provide written verification in report form to the Monitor that provisions are included for wind hazard consultation and testing, documentation of the results, and incorporation into the building design of any necessary wind reduction features.

TABLE 9-1 (CONTINUED)
SUMMARY OF NHPH IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Implementation Procedure	Responsible Unit	Report Mechanism
EIR Section 4.1 Aesthetics, Wind, and Shadow (cont.)				
Impact AES-4 (cont.)	pedestrian wind hazard criterion, without increasing the total number of test point locations exceeding the wind hazard criterion. The ultimate intent is to eliminate any wind hazard exceedance on Parnassus Avenue in the vicinity of the New Hospital in the Existing plus NHPH scenario without unduly burdening the New Hospital design program in a manner that would adversely affect the building's intended function. If UCSF finds that potential design change(s) or other wind speed reduction strategies that would avoid one or more wind hazard exceedances in the Existing plus NHPH scenario to be feasible, then UCSF shall implement the change(s)) needed to achieve such avoidance. If UCSF finds that these potential design change(s) or other wind speed reduction strategies are not feasible as they would unduly restrict the proposed building's space program, result in operational inefficiencies, and/or substantially higher costs, the New Hospital may nonetheless be constructed as approved, provided that the New Hospital incorporates wind speed reduction strategies to the maximum feasible extent, as determined by UCSF in consultation with the wind consultant. Potential design changes could include, but not necessarily be limited to, such measures as horizontal or vertical fins or other projections added to the NHPH, added building setbacks, and/or further rounded/chamfered corners, and other building modifications. Other wind speed reduction strategies could potentially include features such as landscaping, localized installation of porous/solid screens, installation of canopies along non-NHPH building frontages, and the like.	If the wind consultant determines that no design change(s) or other wind speed reduction strategies that would avoid one or more wind hazard exceedances in the Existing plus NHPH scenario would be feasible, and/or if the UCSF chancellor or the chancellor's designee, in consultation with the NHPH design team, determines that identified wind speed reduction strategies would unduly restrict the proposed building's space program, result in operational inefficiencies, and/or substantially higher costs, the UCSF chancellor or the chancellor's designee shall document such determination(s) in writing.		
Impact C-AES-3: Implementation of the NHPH, combined with cumulative projects, would potentially create wind hazards in publicly accessible areas of substantial pedestrian use.	**NHPH Mitigation Measure C-AES-3: Design new cumulative buildings to minimize wind impacts at pedestrian level.** Prior to the approval of the design of individual cumulative buildings, which will be developed pursuant to the CPHP, for which one or more building facades would have a height of 80 feet or more, UCSF shall engage a qualified wind consultant to conduct wind tunnel testing of the proposed building(s) to determine whether the building(s) would result in new exceedance(s) of the City of San Francisco's pedestrian wind hazard criterion. The wind tunnel testing shall be conducted for the building(s) under consideration in the context of then-existing conditions as well as in the context of conditions representative of then-anticipated CPHP buildout (the buildout scenario in this EIR, as may be modified from time to time by UCSF to reflect actual building designs known at the time) so as to determine whether the individual building(s) and/or the buildout condition would result in exceedances of the wind hazard criterion.	Issue instructions in the bid package to alert the architect and design team that UCSF will engage, or require the design team to engage, a qualified wind consultant to evaluate proposed building designs for buildings 80 feet or more in height. Require documentation of the findings of all wind consultation and testing, where deemed necessary, and proposed wind-reducing measures. Review project plans to ensure that necessary wind-reducing features have been incorporated in the design.	UCSF Project Manager and Design Teams	Provide written verification in report form to the Monitor for the contract bid that the bid includes provision for wind hazard consultation and testing, where deemed necessary, for buildings 80 feet or more in height, documentation of the results, and incorporation into the building design of any necessary wind reduction features.

TABLE 9-1 (CONTINUED)
SUMMARY OF NHPH IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Implementation Procedure	Responsible Unit	Report Mechanism
EIR Section 4.1 Aesthetics, Wind, and Shadow (cont.)				
Impact C-AES-3 (cont.)	If the wind tunnel analysis determines that the building(s)' design or buildout conditions would increase the hours of wind hazard exceedance or the number of test points subject to hazardous winds, compared to then-existing conditions, UCSF shall work with the wind consultant to identify feasible mitigation strategies, including design changes (e.g., setbacks, rounded/chamfered building corners, stepped facades, etc.), to eliminate or reduce wind hazards to the maximum feasible extent. If UCSF finds that these changes or other wind speed reduction strategies are not feasible as they would unduly restrict the proposed building's space program, result in operational inefficiencies, and/or substantially higher costs, the building(s) may nonetheless be approved provided that the project incorporates wind speed reduction strategies to the maximum feasible extent, as determined by UCSF in consultation with the wind consultant. Wind speed reduction strategies could also include features such as landscaping, localized installation of porous/solid screens, installation of canopies along building frontages, and the like.			
EIR Section 4.2 Air Quality				
Impact AIR-1: Construction activities associated with the NHPH would result in a cumulatively considerable net increase in emissions of a criteria pollutant for which the project region is non-attainment under an applicable federal or State ambient air quality standard.	**NHPH Mitigation Measure AIR-1: Best Management Practices for Controlling Particulate Emissions during Construction** The following BAAQMD Best Management Practices for particulate emissions control will be required for all construction activities related to the NHPH (BAAQMD, 2017a). These measures will reduce particulate emissions primarily during soil movement, grading and demolition activities but also during vehicle and equipment movement on unpaved project sites. • All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day. • All haul trucks transporting soil, sand, or other loose material off-site shall be covered. • All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited. • All vehicle speeds on unpaved roads shall be limited to 15 mph.	Issue instructions in the bid package of the construction project for contractor to incorporate the mitigation measure. The successful contractor will prepare a construction air pollution control strategy to report on the implementation of the mitigation measure.	UCSF Project Manager and Construction Teams	Provide written verification in report form to the Monitor for the contract bid on each phase to certify that selected bid includes provision for construction air pollution control. Provide a report on construction air pollution control strategies and report to Monitor upon request; but no less than quarterly after beginning each construction phase.

TABLE 9-1 (CONTINUED)
SUMMARY OF NHPH IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Implementation Procedure	Responsible Unit	Report Mechanism
EIR Section 4.2 Air Quality (cont.)				
Impact AIR-1 (cont.)	• All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used. • Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, § 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points. • All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation. The construction contractor shall post a publicly visible sign on the project site(s) with the telephone number and person to contact at UCSF regarding dust complaints. This person shall respond and take corrective action within 48 hours. BAAQMD's telephone number shall also be visible to ensure compliance with applicable regulations.			
Impact AIR-3: Construction activities for the NHPH could expose sensitive receptors to substantial pollutant concentrations and exceed the LRDP EIR standard of significance by exposing receptors to toxic air contaminant emissions that (1) result in a cancer risk greater than 10 cancer cases per 1 million people; or (2) for acute or chronic effects, result in concentrations of toxic air contaminant emissions with a Hazard Index of 1.0 or greater.	**NHPH Mitigation Measure AIR-3: Clean Construction Equipment for NHPH Construction** The construction contractor(s) shall develop a plan demonstrating that the off-road equipment used on-site to construct the NHPH would achieve a fleet-wide average 70 percent reduction in PM_{10} exhaust emissions, compared to uncontrolled aggregate statewide emission rates for similar equipment. One feasible plan to achieve this reduction would include the following: • All mobile diesel-powered off-road equipment larger than 25 horsepower and operating on the project site for more than two days continuously shall be equipped with engines meeting USEPA NOx and PM_{10} emissions standards for Tier 4 final engines or equivalent[1]; and • Use of electrically-powered construction equipment to the degree available and feasible.	Issue instructions in the construction bid package for contractor to incorporate the required clean construction equipment plan. The successful contractor will prepare a plan to achieve a fleet-wide average 70 percent reduction in PM_{10} exhaust emissions, compared to uncontrolled aggregate statewide emission rates for similar equipment.	UCSF Project Manager and Construction Teams	Provide written verification in report form to the Monitor for the contract bid on each phase to certify that selected bid includes provision for construction PM_{10} emissions reduction. Provide a report on construction emissions reduction strategies and report to Monitor upon request; but no less than quarterly after beginning each construction phase.

[1] An equivalent method for particulate emissions may include Level 3 Verified Diesel Emissions Control Strategies of the CARB for particulate matter (filtration).

TABLE 9-1 (CONTINUED)
SUMMARY OF NHPH IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Implementation Procedure	Responsible Unit	Report Mechanism
EIR Section 4.2 Air Quality (cont.)				
Impact C-AIR-1: Construction and operation of the NHPH, combined with cumulative development in the project area, would result in a cumulatively considerable net increase of a criteria pollutant for which the project region is non-attainment under an applicable federal or State ambient air quality standard.	Implement NHPH Mitigation Measure AIR-1.	See NHPH Mitigation Measure AIR-1.	See NHPH Mitigation Measure AIR-1.	See NHPH Mitigation Measures AIR-1.
Impact C-AIR-2: Implementation of the NHPH could contribute considerably to cumulative emissions of TACs and $PM_{2.5}$ that could expose sensitive receptors to substantial pollutant concentrations or health risks.	Implement NHPH Mitigation Measures AIR-3.	See NHPH Mitigation Measure AIR-3.	See NHPH Mitigation Measure AIR-3.	See NHPH Mitigation Measure AIR-3.
EIR Section 4.3 Biological Resources				
Impact BIO-1: Implementation of the NHPH would not have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.	**NHPH Mitigation Measure BIO-1a: Protection of Monarch Butterflies** • Prior to demolition activities, a qualified biologist familiar with monarch butterfly behavior and habitat shall conduct a preconstruction survey for the presence of overwintering monarch butterfly aggregations. The survey shall be conducted in December or January during the period when overwintering aggregations appear. Should an overwintering aggregation be identified in trees within 200 feet of the proposed work sites within or adjacent to the Reserve, a 200-foot buffer shall be established around the occupied trees until the aggregation has dispersed, and construction within the buffer zone shall be avoided for the duration of the overwintering period.	Engage a qualified biologist to undertake the survey(s) specified in the mitigation measure.	UCSF Project Manager	Provide written verification in report form to the Monitor for that the required survey(s) have been conducted prior to ground disturbance.
	NHPH Mitigation Measure BIO-1b: Protection of Nesting Birds • Tree and vegetation removal or pruning associated with project construction and commencement of outdoor project construction activities shall be avoided from February 1 through August 31, the primary local bird nesting season, to the extent feasible. If tree and vegetation removal or pruning associated with project construction is proposed during the nesting period, within seven days prior to the proposed start of construction activities a qualified biologist shall conduct a nesting bird survey of all potential habitat at the construction site and within 250 feet of the perimeter of the construction site.	Issue instructions in bid package of the construction project for the contractor to incorporate the mitigation measure. The contractor will demonstrate knowledge of appropriate timing for tree and vegetation removal and pruning for protection of nesting birds.	UCSF Project Manager and Construction Teams	Provide written verification in report form to the Monitor on each phase to certify that provisions are included for implementation of mitigation measure. Provide construction status report to Monitor upon request.

TABLE 9-1 (CONTINUED)
SUMMARY OF NHPH IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Implementation Procedure	Responsible Unit	Report Mechanism
EIR Section 4.3 Biological Resources (cont.)				
Impact BIO-1 (cont.)	• If any active nests are detected during the pre-construction survey, the qualified biologist shall recommend a work-exclusion buffer zone that shall be designated around the active nest to allow for both the successful fledging of the birds and initiation of work on some portions of the project site. A qualified biologist shall monitor any occupied nest located within a protective buffer zone in order to determine if the designated buffer zone is effective and when the buffer zone is no longer needed. If the buffer zone is determined to be ineffective, its size shall be increased until it is effective, as determined by the qualified biologist, or work within one-quarter mile of the nest shall cease until the young have fledged and are independent of the nest.			
	NHPH Mitigation Measure BIO-1c: Protection of Roosting Bats • Prior to project construction, a qualified bat biologist shall conduct a pre-construction survey for roosting bats in trees to be removed or pruned and structures to be demolished within the work area and within a 50-foot radius of the work area. If no roosting bats are found, no further action is required. If active bat roosts are found within 50 feet of the work area, these roosts shall be flagged and avoided with a suitable buffer, determined in coordination with CDFW. • If a non-maternal roost of bats is found in a tree or structure to be removed or demolished as part of project construction, the individuals shall be safely evicted, under the direction of a qualified bat biologist, by opening the roosting area to allow airflow through the cavity. Removal or demolition should occur no sooner than at least two nights after the initial minor site modification (to alter airflow). This action allows bats to leave during darkness, thus increasing their chance of finding new roosts with a minimum of disturbance. Departure of the bats from the construction area shall be confirmed with a follow-up survey by a qualified bat biologist prior to start of construction. • If active maternity roosts are found in trees or structures that will be removed or demolished as part of project construction, tree removal or demolition of that tree or structure shall commence and be completed before maternity roosting colonies form (generally before March 1), or shall not commence until after young are flying (generally after July 31). Active maternity roosts shall not be disturbed between March 1 and July 31.	Issue instructions for the construction contractor to incorporate the mitigation measure. The contractor will demonstrate knowledge of appropriate procedures for protection of nesting bats.	UCSF Project Manager and Construction Teams	Provide written verification in report form to the Monitor that provisions are included for implementation of mitigation measure. Provide construction status report to Monitor upon request.

TABLE 9-1 (CONTINUED)
SUMMARY OF NHPH IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Implementation Procedure	Responsible Unit	Report Mechanism
EIR Section 4.3 Biological Resources (cont.)				
Impact BIO-1 (cont.)	**NHPH Mitigation Measure BIO-1d: Worker Education** • A qualified biologist shall provide training to all construction workers prior to starting work on plan components. The training shall cover special-status species with potential to be found onsite, avoidance measures to be undertaken if a species is found, and best management practices for site housekeeping. **NHPH Mitigation Measure BIO-1e: Botanical Surveys** • Within suitable habitat for special-status plant species (open gravel areas along roadsides and hillsides for coastal triquetrella), a qualified biologist approved by CDFW shall conduct a focused survey for all species with potential to be present prior to ground disturbance. If no special-status plants are observed, no further action is required. • If special-status plant species, including coastal triquetrella are observed, the plants will be avoided with a suitable buffer, determined in coordination with CDFW. The buffer zone shall be clearly demarcated using exclusion fencing. If establishing an avoidance buffer is not feasible, individual plants shall be transplanted to an area with suitable physical and biological conditions outside of the work area and monitored and adaptively managed for five years.			
Impact BIO-2: Implementation of the NHPH would not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.	**NHPH Mitigation Measure BIO-2a: Prevention of Harm to Migrating Birds During Construction** The construction contractor shall ensure that construction areas requiring lights shall include the following measures to the extent feasible: • Construction-related lighting shall be fully shielded and focused down to ensure no significant illumination passes beyond the immediate work area. Lighting shall be positioned around the perimeter of the work area positioned toward activity and not surrounding habitat of the Reserve. • Yellow or orange light shall be used where possible. • Construction personnel shall reduce the amount of lighting to the minimum necessary to safely accomplish the work. • Night construction near suitable habitat for nesting and migratory birds and bats (i.e. the Reserve forest and understory vegetation) shall be avoided during nesting season (February 15 – August 15). If night construction near these areas cannot be avoided, light shall not be allowed to shine directly into suitable habitat.	Issue instructions for the construction contractor to incorporate the mitigation measure. The contractor will demonstrate knowledge of appropriate procedures for construction lighting and nigh construction activity to protect migrating birds.	UCSF Project Manager and Construction Teams	Provide written verification in report form to the Monitor for each phase to certify that provisions are included for implementation of mitigation measure. Provide construction status report to Monitor upon request.

TABLE 9-1 (CONTINUED)
SUMMARY OF NHPH IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Implementation Procedure	Responsible Unit	Report Mechanism
EIR Section 4.3 Biological Resources (cont.)				
Impact BIO-2 (cont.)	**NHPH Mitigation Measure BIO-2b: Bird-Safe Building Treatments** UCSF staff shall confirm that building plans include the required building design measures prior to the start of construction: • Avoid installation of lighting in areas where not required for public safety. • Examine and adopt alternatives to bright, all-night, floor-wide lighting when interior lights would be visible from the exterior or when exterior lights must be left on at night, including: – Installing motion-sensitive lighting – Installing task lighting – Installing programmable timers – Installing fixtures that use lower-wattage, sodium, and yellow-red spectrum lighting (if compatible with personnel safety requirements) • Where exterior lights are to be left on at night, install fully shielded lights to contain and direct light away from the sky. • Employ glazing options such as use of either fritted glass, Dichroic glass, etched glass, translucent glass, or glass that reflects ultraviolet light in appropriate portions of the building façade. • Minimize light and glare resulting from the new building through the use of landscaping materials and choice of primary façade materials. Project design shall not include reflective metal walls and mirrored glass walls as primary building materials for facades.	Issue instructions to design team to incorporate bird-safe building treatments in building designs. Require architects and design professionals to document use of bird-safe treatments and review project plans to ensure that such features have been incorporated in the design.	UCSF Project Manager and Design Teams	Verify that project incorporates treatments prior to final project approval. After construction, the Project Manager shall provide written verification to the Monitor that treatments were installed according to the design.
Impact C-BIO-1: Implementation of the NHPH would not result in cumulatively considerable impacts on biological resources, in combination with past, present and reasonably foreseeable future projects in the vicinity of the NHPH site.	Implement NHPH Mitigation Measures BIO-1a through BIO-1e, and BIO-2a and BIO-2b.	See NHPH Mitigation Measures BIO-1a through 1e, BIO-2a, and BIO-2b.	See NHPH Mitigation Measures BIO-1a through 1e, BIO-2a, and BIO-2b.	See NHPH Mitigation Measures BIO-1a through 1e, BIO-2a, and BIO-2b.

TABLE 9-1 (CONTINUED)
SUMMARY OF NHPH IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Implementation Procedure	Responsible Unit	Report Mechanism
EIR Section 4.4 Cultural Resources and Initial Study Sections V and XVII: Cultural Resources and Tribal Cultural Resources				
Initial Study Impact V.b: Implementation of the NHPH could cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5.	**NHPH Mitigation Measure CUL-V.b: Inadvertent Discovery of Archaeological Resources and Tribal Cultural Resources** Prior to commencement of construction activities, all on-site personnel shall attend a mandatory pre-project training to outline the general archaeological and tribal cultural sensitivity of the project area. The training will include a description of the types of resources that could be encountered and the procedures to follow in the event of an inadvertent discovery of resources. If prehistoric or historic-era archaeological resources are encountered by construction personnel during ground-disturbing activities, all construction activities within 100 feet shall halt and the contractor shall notify the UCSF Environmental Coordinator (EC). The UCSF EC shall retain a Secretary of the Interior-qualified archaeologist (qualified archaeologist) to inspect the find within 24 hours of discovery. If it is determined that the project could damage a historical resource or a unique archaeological resource, construction shall cease in an area determined by the qualified archaeologist until a mitigation plan has been prepared and implemented [CEQA Guidelines 15064.5(b)(4)]. If the find is a potential tribal cultural resource, the UCSF EC shall contact a Native American representative or representatives (as provided by the Native American Heritage Commission) [PRC 21074(2)(c)]. The qualified archaeologist, in consultation with the UCSF EC and the Native American representative(s), shall determine when construction can resume. If the resource is determined to be a historical resource or a unique archaeological resource, the preferred mitigation shall be preservation in place. In accordance with PRC Section 21083.2(b), preservation in place shall be accomplished through: (1) modifying the construction plan to avoid the resource; (2) incorporating the resource within open space; (3) capping and covering the resource; or (4) deeding the resource site into a permanent conservation easement. If preservation in place is not feasible, the qualified archaeologist, in consultation with the UCSF EC and the Native American representative(s) (if the resource is prehistoric), shall prepare and implement a detailed treatment	Issue instructions for the construction contractor to incorporate the mitigation measure. The successful contractor will demonstrate knowledge of procedures and requirements when cultural resources are discovered during construction activities.	UCSF Project Manager and Construction Teams	Provide written verification in report form to the Monitor on each phase to certify that provisions are included for implementation of mitigation measure if cultural resources are discovered during construction activities. Provide construction status report to Monitor upon request and on completion of construction.

TABLE 9-1 (CONTINUED)
SUMMARY OF NHPH IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Implementation Procedure	Responsible Unit	Report Mechanism
EIR Section 4.4 Cultural Resources and Initial Study Sections V and XVII: Cultural Resources and Tribal Cultural Resources (cont.)				
Initial Study Impact V.b (cont.)	plan. In all cases treatment will be carried out with dignity and respect (including protecting the cultural character, traditional use, and confidentiality of the resource). For prehistoric resources, the Native American representative(s) will be consulted on the research approach, methods, and whether burial or data recovery or alternative mitigation is appropriate for the find. Treatment for most resources could consist of (but shall not be limited to) sample excavation, site documentation, and historical research, as appropriate to the discovered prehistoric resource. The treatment plan shall include provisions for analysis of data in a regional context as appropriate to the discovered prehistoric resource, reporting of results within a timely manner, and dissemination of reports to local and state repositories, libraries, and interested professionals.			
Initial Study Impact V.c: Implementation of the NHPH could disturb human remains, including those interred outside of dedicated cemeteries.	**NHPH Mitigation Measure CUL-V.c: Inadvertent Discovery of Human Remains** In the event of discovery or recognition of any human remains during ground-disturbing activities, treatment shall comply with all applicable state and federal laws. All construction activities within 100 feet shall halt and the contractor shall notify the UCSF Environmental Coordinator (EC). In accordance with PRC 5097.98, the UCSF EC shall contact the San Francisco Office of the Medical Examiner (Medical Examiner) to determine that no investigation of the cause of death is required. The Medical Examiner shall contact the Native American Heritage Commission (NAHC) within 24 hours if it is determined that the remains are Native American. The NAHC will then identify the person or persons it believes to be the most likely descendant (MLD) from the deceased Native American. Within 48 hours, the MLD shall make recommendations to the UCSF EC of the appropriate means of treating the human remains and any grave goods. Whenever the NAHC is unable to identify an MLD, the MLD fails to make a recommendation, or the parties are unable to agree on the appropriate treatment measures, the human remains shall be reinterred with appropriate dignity on the property in a location not subject to further and future subsurface disturbance.	Issue instructions for the construction contractor to incorporate the mitigation measure. The contractor will demonstrate knowledge of procedures and requirements when cultural resources are discovered during construction activities.	UCSF Project Manager and Construction Teams	Provide written verification in report form to the Monitor on each phase to certify that provisions are included for implementation of mitigation measure if cultural resources are discovered during construction activities. Provide construction status report to Monitor upon request and upon completion of construction.

TABLE 9-1 (CONTINUED)
SUMMARY OF NHPH IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Implementation Procedure	Responsible Unit	Report Mechanism
EIR Section 4.4 Cultural Resources and Initial Study Sections V and XVII: Cultural Resources and Tribal Cultural Resources (cont.)				
Initial Study Impact XVII.a and XVII.b: Implementation of the NHPH could cause a substantial adverse change in the significance of a tribal cultural resource, defined in PRC Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe.	Implement Mitigation Measure NHPH Mitigation Measure CUL-V.b:	See NHPH Mitigation Measure CUL-V.b.	See NHPH Mitigation Measure CUL-V.b.	See NHPH Mitigation Measure CUL-V.b.
EIR Section 4.6 Geology and Soils and Initial Study Section VII: Geology and Soils				
Impact GEO-3: Construction and operation of the NHPH would not directly or indirectly cause substantial adverse effects, including the risk of loss, injury, or death involving landslides.	**NHPH Mitigation Measure GEO-3:** UCSF shall implement the following geotechnical recommendations as adapted from those contained within the Rutherford & Chekene March 2019 report: • Remove selected trees located on or at the crest of steep rock slopes on which tree root wedging decreases stability. Determination of specific trees to be removed shall be made in association with a certified arborist and state licensed geotechnical engineer or engineering geologist. Removal will involve cutting trees and leaving stumps such that the root system can rot in situ with minimal disturbance to the surface geology. • Conduct qualitative monitoring of identified slopes by a state licensed geotechnical engineer or engineering geologist or as directed by said professional. Monitoring shall occur, at a minimum, after each major storm or earthquake, as defined by the geotechnical professional. The geotechnical professional shall submit a report of findings to UCSF that includes recommendations for additional slope stability improvements, if deemed necessary, to maintain continued safety in accordance with geotechnical standards and building code requirements.	For NHPH improvements proposed adjacent to and within the Reserve that would involve excavation or cut slope cut excavation, project-specific geotechnical evaluations shall be prepared as part of the design process and include evaluations of potentially affected slopes, recommendations for tree removal on or at the crest of steep rock slopes, and recommendations for monitoring frequency.	A state-licensed geotechnical engineer in consultation with certified arborist, shall report to the UCSF Project Manager.	The UCSF Project Manager shall submit the results of each tree assessment to the Monitor.

TABLE 9-1 (CONTINUED)
SUMMARY OF NHPH IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Implementation Procedure	Responsible Unit	Report Mechanism
EIR Section 4.6 Geology and Soils and Initial Study Section VII: Geology and Soils (cont.)				
Initial Study Impact VII.f-6: Construction associated with the NHPH could have the potential to directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.	**NHPH Mitigation Measure GEO-VII.f:** Prior to commencement of construction activities, all on-site personnel shall attend a mandatory pre-project training to outline the general paleontological sensitivity of the project area. The training will include a description of the types of resources that could be encountered and the procedures to follow in the event of an inadvertent discovery of resources. If paleontological resources, such as fossilized bone, teeth, shell, tracks, trails, casts, molds, or impressions are discovered during ground-disturbing activities, work shall stop in that area and within 100 feet of the find until a qualified paleontologist meeting the Society of Vertebrate Paleontology (SVP) Standards can assess the nature and importance of the find and, if necessary, develop appropriate salvage measures in conformance with SVP standards (2010). If the discovery can be avoided and no further impacts will occur, no further effort shall be required. If the resource cannot be avoided and may be subject to further impact, a qualified paleontologist shall evaluate the resource and determine whether it is "unique" under CEQA. Any discovered paleontological resources that are determined by the qualified paleontologist to be "unique" in accordance with CEQA shall be given appropriate salvage measures in conformance with SVP standards (2010).If paleontological resources, such as fossilized bone, teeth, shell, tracks, trails, casts, molds, or impressions are discovered during ground-disturbing activities, work shall stop in that area and within 100 feet of the find until a qualified paleontologist meeting the Society of Vertebrate Paleontology (SVP) Standards can assess the nature and importance of the find and, if necessary, develop appropriate salvage measures in conformance with SVP standards (2010). If the discovery can be avoided and no further impacts will occur, no further effort shall be required. If the resource cannot be avoided and may be subject to further impact, a qualified paleontologist shall evaluate the resource and determine whether it is "unique" under CEQA. Any discovered paleontological resources that are determined by the qualified paleontologist to be "unique" in accordance with CEQA shall be given appropriate salvage measures in conformance with SVP standards (2010).	Issue instructions for the construction contractor to incorporate the mitigation measure. The contractor will demonstrate knowledge of procedures and requirements when paleontological resources are discovered during construction activities.	UCSF Project Manager and Construction Teams	Provide written verification in report form to the Monitor on each phase to certify that provisions are included for implementation of mitigation measure if paleontological resources are discovered during construction activities. Provide construction status report to Monitor upon request and upon completion of construction.

TABLE 9-1 (CONTINUED)
SUMMARY OF NHPH IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Implementation Procedure	Responsible Unit	Report Mechanism
EIR Section 4.7 Greenhouse Gas Emissions				
Impact GHG-1: Construction and operation of the NHPH would generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.	**NHPH Mitigation Measure GHG-1: Monitor emissions annually and acquire carbon offset credits in conformance with CARB guidance, prioritizing local and in-State offsets to achieve and maintain carbon neutrality for the NHPH as part of campus-wide emissions.** As part of this mitigation measure, UCSF is making the following separate, though overlapping, GHG emission reduction commitments: (1) As a CARB-covered entity, UCSF will maintain compliance with CARB's cap and trade program; (2) Per existing UC Policy, UCSF's Scope 1 and Scope 2 GHG emissions shall, commencing in 2025, be entirely carbon neutral; (3) Also per existing UC Policy, commencing in 2025, UCSF's Scope 1 and Scope 2 emissions shall be voluntarily offset while Scope 3 emissions from commuters and air travel shall be voluntarily offset by 2050; and (4) UCSF's total GHG operational emissions from all Scope 1, 2, and 3 sources (as defined in this EIR) shall not exceed the Parnassus Heights campus's baseline emissions from these sources in 2019. Each of these commitments is described in more detail below. ***Continued Compliance with CARB's Cap and Trade Program*:** Any carbon offset credits purchased for the purpose of compliance with CARB's cap and trade program shall be purchased from an accredited carbon credit market. Such offset credits (or California Carbon Offsets) shall be registered with, and retired[2] by an Offset Project Registry, as defined in 17 California Code of Regulations § 95802(a), approved by the California Air Resources Board such as, but not limited to, Climate Action Reserve, American Carbon Registry or Verra (formerly Verified Carbon Standard). In order to demonstrate that the carbon offset credits provided are real, permanent, additional, quantifiable, verifiable, and enforceable, as those terms are defined in 17 California Code of Regulations § 95802(a), UCSF shall document in its annual report: (i) the protocol used to develop those credits, and (ii) the third-party verification report concerning those credits. As and when the credits are retired, UCSF shall document in its annual report the unique serial numbers of those credits showing that they have been retired.	Throughout the lifetime of the CPHP, prepare, or cause to be prepared by a qualified GHG emissions expert, an annual report of campus GHG emissions (Scope 1, 2, and 3). If the annual monitoring shows that emissions for a given year exceed the 2018 baseline emissions, purchase carbon offset credits that comply with CARB guidance, prioritizing local and in-State offsets.	UCSF Project Manager	Provide the annual GHG report to the Monitor. If the annual report reveals the need for purchase of carbon offset credits, provide the Monitor with documentation that such purchase has occurred, in compliance with CARB guidance.

[2] When Climate Reserve Tonnes (CRTs) are transferred to a retirement account in the Reserve System, they are considered retired. Retirement accounts are permanent and locked to prevent a retired CRT from being transferred again. CRTs are retired when they have been used to offset an equivalent ton of emissions or have been removed from further transactions on behalf of the environment.

TABLE 9-1 (CONTINUED)
SUMMARY OF NHPH IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Implementation Procedure	Responsible Unit	Report Mechanism
EIR Section 4.7 Greenhouse Gas Emissions (cont.)				
Impact GHG-1 (cont.)	***Compliance with UC Policy - Offsets for Emissions from Commuters and Air Travel*:** Compliance with UC's policies for carbon neutrality from specific Scope 3 sources (as defined by Second Nature's Carbon Commitment) by 2050 or sooner as required by UC's Policy on Sustainable Practices. (UCES, 2020). Neutrality may be achieved through reductions in direct emissions, and the purchase of carbon offset credits. UCSF will purchase voluntary carbon offset credits as the final action to reach the GHG emission reduction targets. As part of the UC Carbon Neutrality Initiative, UC Sustainable Practices Policy has been updated and internal guidelines have been developed to ensure that only high-quality voluntary carbon offsets are purchased by UC and any use of offsets for this purpose will result in additional, verified GHG emissions reductions from actions that align, as much as possible, with UC's research, teaching, and public service mission. Specifically, any voluntary carbon offset credits used by UCSF to mitigate Scope 3 GHG emissions will: 1. Prioritize local (within the air district) and in-state offset credits over in-nation offset credits. Offset credits shall be third-party verified by a major registry recognized by CARB such as CAR (Climate Action Reserve) or equivalent and will also subjected to an internal peer review process. If sufficient local and in-state offset credits are not available, UCSF will purchase CARB conforming or equivalent national offset credits registered with an approved registry and which meet UC criteria for high-quality offsets. 2. Be reported publicly and tracked through the Climate Registry (TCR) as required by UC policy. TCR is a non-profit organization governed by U.S. states and Canadian provinces and territories. UCSF's TCR reports will be third-party verified and posted publicly. ***Compliance with UC Policy – Carbon Neutrality:*** Ensure achievement of net zero greenhouse gas emissions from its buildings and vehicle fleet by 2025. For purposes of this section, campuses shall include their related health location for all goals. GHG emissions reduction goals pertain to emissions of the six Kyoto greenhouse gasses[3] originating from all Scope 1 and Scope 2 sources as specified by the Climate Registry, and from Scope 3 emissions as specified by			

[3] The six greenhouse gasses identified in the Kyoto Protocol are carbon dioxide, methane, nitrous oxide, sulfur hexafluoride, hydrofluorocarbons, and perfluorocarbons.

TABLE 9-1 (CONTINUED)
SUMMARY OF NHPH IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Implementation Procedure	Responsible Unit	Report Mechanism
EIR Section 4.7 Greenhouse Gas Emissions (cont.)				
Impact GHG-1 (cont.)	Second Nature's Carbon Commitment, which includes air travel paid through the institution, and commuting to and from campus by students, faculty and other academic appointees, and staff. ***Commitment to control Parnassus Heights Annual Emissions to not exceed existing baseline*:** UCSF shall monitor GHG operational emissions from all Scope 1, 2 and 3 sources annually. Upon the completion and occupancy of the NHPH, inclusive of the related improvements, in 2033, the estimated annual emissions shall be compared to the campus site year 2019 baseline of 127,083 MT CO_2e per year to determine whether the emissions have increased above the baseline level. For the identified amount of exceedance of the performance standard, UCSF shall purchase carbon offset credits sufficient to maintain carbon neutrality. These offset credits shall be purchased for the types of Scope 1 and Scope 2 emissions that are already reported to and verified by a third party verification body annually, as well as for Scope 3 emissions from patient and visitor vehicle trips, indirect emissions from water and wastewater demand, and solid waste emissions, all of which are included in the EIR analysis above as required by CEQA. Carbon offset credits used for this purpose shall originate from a voluntary carbon credit registry that TCR recognizes such as: CAR, ACR, or Verra (other registries are also applicable). Offset credits in this case shall be registered, transferred, and retired at such registries. The offsets will also be subjected to an internal UC peer review process. The protocols of each registry, and UC own internal screens and criteria, shall be used to demonstrate that the carbon offset credits provided are real, permanent, additional, and have been independently verified as adhering to its applicable project protocols. For this purpose, local (within the air district) and in-state carbon offset credits shall be prioritized over in-nation offset credits. If sufficient local and in-state offset credits are not available, UCSF will purchase CARB conforming or equivalent national offset credits registered with an approved registry and which meet UC criteria for high-quality offsets. As and when the credits are retired, UCSF shall document in its annual report the unique identifier of those credits showing that they have been retired and accepted by TCR.			

TABLE 9-1 (CONTINUED)
SUMMARY OF NHPH IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Implementation Procedure	Responsible Unit	Report Mechanism
EIR Section 4.8 Hazards and Hazardous Materials				
Impact HAZ-1: Construction and operation of the NHPH could create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.	**NHPH Mitigation Measure HAZ-1:** An Excavation Management Plan shall be prepared by a qualified consultant to include the California Air Resource Board (CARB) Asbestos Airborne Toxic Control Measure (ATCM) for Construction, Grading, Quarrying and Surface Mining Operations to minimize naturally occurring asbestos through the application of best management practices for fugitive dust from construction, grading and excavation operations. Unless site specific testing by a certified laboratory can demonstrate the absence of naturally occurring asbestos in materials to be excavated, construction specifications shall include implementation of this CARB ATCM.	Issue instructions for the construction contractor to incorporate the mitigation measure. The contractor will demonstrate knowledge of procedures and requirements for managing naturally occurring asbestos.	UCSF Project Manager and Construction Teams	Provide written verification in report form to the Monitor on each phase to certify that provisions are included for implementation of mitigation measure for managing naturally occurring asbestos during ground-disturbing activities. Provide construction status report to Monitor upon request.
Impact HAZ-4: The NHPH would not be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. However, previously unknown contamination could be encountered during construction and could have the potential to create a significant hazard to the public or the environment.	**NHPH Mitigation Measure HAZ-4:** Prior to development on the NHPH sites, a Soil Management Plan shall be prepared by a qualified environmental consulting firm to reflect current regulatory requirements and risk management protocols that are in accordance with Regional Water Quality Control Board oversight. The Plan shall include measures to address protocols for identifying, handling, and characterizing suspect contaminated soils. On-site personnel shall attend mandatory pre-project training regarding the Plan. Notification and sampling requirements for adequate characterization shall be in accordance with the overseeing agency (RWQCB or SFDPH) requirements and any required removal or remediation work shall be completed to the overseeing agency's standards prior to occupancy of the new structure.	Issue instructions for the construction contractor to incorporate the mitigation measure. The contractor will demonstrate knowledge of procedures and requirements for soil management with respect to suspected soil contamination.	UCSF Project Manager and Construction Teams	Provide written verification in report form to the Monitor on each phase to certify that provisions are included for implementation of mitigation measure for managing suspected soil contamination during ground-disturbing activities. Provide construction status report to Monitor upon request.
EIR Section 4.11 Noise and Vibration				
Impact NOI-1: Construction activities under the NHPH would generate a substantial temporary increase in ambient noise levels in the vicinity of the construction project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.	**NHPH Mitigation Measure NOI-1a: Construction Noise Control Measures** UCSF contractors shall employ site-specific noise attenuation measures during construction of projects under the NHPH to reduce the generation of construction noise. These measures shall be included in a Noise Control Plan that shall be submitted for review and approval by UCSF to ensure that construction noise is consistent with the standards set forth in the City's Noise Ordinance. Measures specified in the Noise Control Plan and implemented during project construction shall include, at a minimum, the following noise control strategies: • Equipment and trucks used for construction shall use the best available noise control techniques (e.g., improved mufflers, equipment redesign, use of intake silencers, ducts, engine enclosures, and acoustically attenuating shields or shrouds).	Issue instructions for the construction contractor to incorporate the mitigation measure. The contractor will prepare a construction noise control plan to report on the implementation of the mitigation measure.	UCSF Project Manager and Construction Teams	Provide written verification in report form to the Monitor on each phase to certify that provisions are included for construction noise control. Provide a report on construction noise control to Monitor upon request; but no less than quarterly after beginning each construction activity.

TABLE 9-1 (CONTINUED)
SUMMARY OF NHPH IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Implementation Procedure	Responsible Unit	Report Mechanism
EIR Section 4.11 Noise and Vibration (cont.)				
Impact NOI-1 (cont.)	• Impact tools (e.g., jack hammers, pavement breakers, and rock drills) used for construction shall be hydraulically or electrically powered wherever possible to avoid noise associated with compressed air exhaust from pneumatically powered tools. If the contactor deems the use of pneumatic tools to be unavoidable, the contractor shall prepare a mitigation measure variance explaining the conditions that make the exemption necessary and submit it to the UCSF Project Manager, and an exhaust muffler on the compressed air exhaust shall be used; this muffler can lower noise levels from the exhaust by up to about 10 dBA. External jackets on the tools themselves shall be used where feasible; this could achieve a reduction of 5 dBA. Quieter procedures, such as use of drills rather than impact tools, shall be used unless the contractor, based on professional judgment, deems these alternative methods inappropriate for conditions encountered or reasonable allocation of manpower, whereby the contractor shall prepare a mitigation measure variance explaining the conditions that make the exemption necessary and submit it to the UCSF Project Manager. • Stationary noise sources shall be located as far from adjacent receptors as possible, and they shall be muffled and enclosed within temporary sheds, incorporate insulation barriers, or include other measures. • Shield staging areas where adjacent sensitive receptors have direct line-of-sight with loading and delivery activities. Shielding may consist of plywood fencing with no gaps or acoustical paneling erected in K-rails.			
	NHPH Mitigation Measure NOI-1b: Construction Hours Construction hours shall be restricted to the hours listed in the table below. In rare circumstances, work may need to occur outside of these work hour limits. In such cases, UCSF Community and Government Relations will receive advance notice from the project manager, at least one week in advance as feasible, and will engage the community to identify measures to minimize potential impacts. These measures may include, but not be limited to, restricting work to smaller time windows, condensing the overall duration of nighttime work to the degree feasible, and erecting temporary barriers to shield the short-term nighttime activity.	Issue instructions for the construction contractor to incorporate the mitigation measure. The contractor will prepare a construction noise control plan to report on the implementation of the mitigation measure.	UCSF Project Manager and Construction Teams	Provide written verification in report form to the Monitor on each phase to certify that provisions are included for construction noise control through limitations on construction hours (may be incorporated into report for Mitigation Measure NOI-1a). Provide a report on construction noise control to Monitor upon request; but no less than quarterly after beginning each construction activity (may be incorporated into report for Mitigation Measure NOI-1a).

TABLE 9-1 (CONTINUED)
SUMMARY OF NHPH IMPACTS AND MITIGATION MEASURES

<table>
<tr><th>Environmental Impact</th><th>Mitigation Measures</th><th>Implementation Procedure</th><th>Responsible Unit</th><th>Report Mechanism</th></tr>
<tr><td colspan="5">EIR Section 4.11 Noise and Vibration (cont.)</td></tr>
<tr><td>Impact NOI-1 (cont.)</td><td>
Construction Hours
<table>
<tr><th></th><th colspan="2">“Not Noisy” Work[1]</th><th colspan="2">Noisy Work</th></tr>
<tr><th></th><th>Regular hours</th><th>Extended hours[2]</th><th>Regular hours</th><th>Extended hours[1]</th></tr>
<tr><td>Monday - Friday</td><td>7:00 AM to 5:00 PM</td><td>5:00 PM to 8:00 PM</td><td>8:00 AM to 5:00 PM</td><td></td></tr>
<tr><td>Saturday</td><td></td><td>8:00 AM to 5:00 PM</td><td></td><td>9:00 AM to 4:00 PM</td></tr>
<tr><td>Sunday</td><td></td><td>8:00 AM to 5:00 PM</td><td></td><td></td></tr>
</table>
NOTES:
1 “Not Noisy” work = 80 decibels or less at 100 feet; “Noisy” work = more than 80 decibels at 100 feet.
2 Extended hours to be considered by UCSF Community and Government Relations with advance notice from the project manager.

NHPH Mitigation Measure NOI-1c: Pile-Installation Noise-Reducing Techniques

Noise-reducing pile-installation techniques shall be employed during project construction. These techniques shall include:

Installing cast-in-place concrete piles. Noise from auger drilling is 17 dBA less than an impact pile driver.
Vibrating piles into place, and installing shrouds around the pile-driving hammer where feasible.
Implement “quiet” pile-installation technology (such as pre-drilling of piles and the use of more than one pile driver to shorten the total pile installation duration).

</td><td></td><td></td><td></td></tr>
<tr><td></td><td>Mitigation: Implement NHPH Mitigation Measure TRANS-5: Construction Coordination and Monitoring Measures–Construction Traffic Control Plan.</td><td>See NHPH Mitigation Measure TRANS-5.</td><td>See NHPH Mitigation Measure TRANS-5.</td><td>See NHPH Mitigation Measure TRANS-5.</td></tr>
</table>

TABLE 9-1 (CONTINUED)
SUMMARY OF NHPH IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Implementation Procedure	Responsible Unit	Report Mechanism
EIR Section 4.11 Noise and Vibration (cont.)				
Impact NOI-2: Implementation of the NHPH would generate substantial permanent increases in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.	**NHPH Mitigation Measure NOI-2: New Hospital Cooling Tower Noise Control** New Hospital cooling tower equipment shall be designed to meet the City's Police Code requirements of not exceeding 8 dBA over existing ambient noise levels without the equipment operating as well as an interior noise standard at any sleeping or living room in any dwelling unit located on residential property of 45 dBA between 10:00 PM and 7:00 AM, and 50 dBA between 7:00 AM and 10:00 PM. Specifically, given the existing monitored nighttime noise level at the nearest property line of 53 dBA, cooling towers shall be selected, designed, or enclosed to achieve an exterior performance standard of 61 dBA or less at the nearest property line. Achievement of this exterior standard would be sufficient to also achieve an interior nighttime standard of 45 dBA. The proposed cooling tower manufacturer offers towers with "ultra quiet" fans capable of a noise level reduction of up to 12 dBA (Marley, 2021). A qualified acoustical consultant shall be retained to assess mechanical noise to determine the necessary methods by which the selected units would need further attenuation measures to achieve the identified performance standard and conform with the City's Police Code.	Retain, or cause to be retained as part of the mechanical systems design for each new building or building renovation that includes installation of new mechanical equipment, a qualified acoustical consultant to evaluate noise generation characteristics of new mechanical systems and to ensure that noise levels comply with the City's Police Code. Following commissioning of new mechanical equipment, conduct noise measurements to ensure Police Code compliance.	UCSF Project Manager and Design Teams	Provide written verification in report form to the Monitor that the selected mechanical equipment will comply with the City's Police Code, including enumeration and evaluation of any required noise control or reduction measures. Following commissioning of new mechanical equipment, provide written verification in report form to the Monitor that the selected mechanical equipment does comply with the City's Police Code. If non-compliance is detected, identify and install additional noise reduction features.
Impact NOI-3: Construction activities for the NHPH and related improvements could result in generation of excessive groundborne vibration or groundborne noise levels.	**NHPH Mitigation Measure NOI-3: Assessment and Relocation/Retrofitting of Vibration-Sensitive Equipment** UCSF shall evaluate the presence of vibration-sensitive equipment within 150 feet of construction and demolition areas. Any sensitive equipment shall be evaluated for the existing extent of vibration isolation and relocated or vibration isolation shall be further embellished, as warranted. Based on available guidance (FTA, 2018), a performance standard of 65 VdB shall be implemented in lieu of any other available equipment-specific criterion.	Prior to the start of any demolition or construction activity, identify vibration-sensitive equipment within 150 feet, assess the vibration isolation of such equipment, and enhance isolation if deemed necessary.	UCSF Project Manager	Provide written verification in report form to the Monitor that vibration-sensitive equipment within 150 feet of construction and demolition shall be used, and, if deemed necessary, provisions to enhance vibration isolation; or alternatively, that equipment is suspended during substantial vibration-generating activities within 150 feet.

TABLE 9-1 (CONTINUED)
SUMMARY OF NHPH IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Implementation Procedure	Responsible Unit	Report Mechanism
EIR Section 4.11 Noise and Vibration (cont.)				
Impact C-NOI-1: Implementation of the NHPH, combined with cumulative construction noise in the project area, would generate a substantial temporary increase in ambient noise levels from construction activity in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.	Implement NHPH Mitigation Measures NOI-1a, NOI-1b, and NHPH Mitigation Measure TRANS-5: Construction Coordination and Monitoring Measures.	See NHPH Mitigation Measures NOI-1a, NOI-1b, and TRANS-5.	See NHPH Mitigation Measures NOI-1a, NOI-1b, and TRANS-5.	See NHPH Mitigation Measures NOI-1a, NOI-1b, and TRANS-5.
Impact C-NOI-2: Implementation of the NHPH, combined with cumulative development in the project area, would generate substantial permanent increases in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.	Implement NHPH Mitigation Measure NOI-2.	See NHPH Mitigation Measure NOI-2.	See NHPH Mitigation Measure NOI-2.	See NHPH Mitigation Measure NOI-2.
Impact C-NOI-3: Implementation of the NHPH, combined with cumulative construction in the project area, would result in generation of excessive groundborne vibration or groundborne noise levels.	Implement NHPH Mitigation Measure NOI-3.	See NHPH Mitigation Measure NOI-3.	See NHPH Mitigation Measure NOI-3.	See NHPH Mitigation Measure NOI-3.
EIR Section 4.15 Transportation				
Impact TRANS-5: Construction of the New Hospital and related improvements could temporarily impact travel conditions along sidewalks and roadways serving the campus site.	**NHPH Mitigation Measure TRANS-5: Construction Coordination and Monitoring Measures** ***Construction Traffic Control Plan.*** In order to reduce potential conflicts between construction activities and pedestrians, transit and autos during construction activities at the project site, UCSF shall require construction contractor(s) to prepare a traffic control plan for major phases of project construction (e.g., demolition, construction, or renovation of individual buildings). UCSF and their construction contractor(s) will meet with relevant City agencies to coordinate feasible measures to reduce traffic congestion, including temporary transit stop relocations (e.g., Parnassus Avenue) and utilities and other measures to reduce potential traffic and transit disruption and pedestrian circulation effects during major phases of construction of the NHPH. For any work within the	Issue instructions for construction contractor to incorporate the mitigation measure. The contractor will demonstrate the ability to prepare a complete and thorough Construction Traffic Control Plan that addresses traffic, transit, pedestrian, and bicycle movement; incorporates measures to limit single-occupancy vehicle travel by construction workers; and ensures minimal disruption of access for nearby residences, institutions, and businesses.	UCSF Project Manager and Construction Teams	Provide written verification in report form to the Monitor on each phase to certify that a complete and thorough Construction Traffic Control Plan is included. Provide a report on construction traffic control to Monitor upon request; but no less than quarterly after beginning each construction activity.

TABLE 9-1 (CONTINUED)
SUMMARY OF NHPH IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Implementation Procedure	Responsible Unit	Report Mechanism
EIR Section 4.15 Transportation (cont.)				
Impact TRANS-5 (cont.)	public right-of-way, the contractor will also be required to comply with the City of San Francisco's *Regulations for Working in San Francisco Streets*, which establish rules and permit requirements so that construction activities can be done safely and with the least possible interference with pedestrians, bicyclists, transit, and vehicular traffic. ***Reduce Drive Alone Mode Share for Construction Workers.*** In order to minimize parking demand and vehicle trips associated with construction workers, UCSF shall require the construction contractor to include in the Construction Traffic Control Plan methods to encourage walking, bicycling, carpooling, and transit access to the campus site by construction workers. Strategies that may be included in this plan could be to have a construction worker shuttle or allow preferential parking for carpools. ***Project Construction Updates for Adjacent Residents and Businesses*** – In order to minimize construction impacts on access for nearby residences, institutions, and businesses, UCSF shall provide nearby residences and businesses with regularly-updated information regarding project construction, including construction activities, peak construction vehicle activities (e.g., concrete pours, excavation),and travel lane closures, via a newsletter, website, and/or quarterly construction update meetings with neighbors.			

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Appendix O-TL1
Comment Letter O-TL1 Appendix

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Greg Kamman, PG, CHG
Senior Ecohydrologist

Education

MS, 1989, Geology, Sedimentology and Hydrogeology, Miami University, Oxford, OH

BA, 1985, Geology, Miami University, Oxford, OH

Professional Registration

1993, Professional Geologist, California, #5737

1995, Certified Hydrogeologist, California, #360

Professional Experience

cbec, inc., eco-engineering, West Sacramento, CA, Senior Ecohydrologist, 2020-present

Kamman Hydrology & Engineering, Inc., San Rafael, CA, Principal Hydrologist/Vice President, 1997-2020

Balance Hydrologics, Inc., Berkeley, CA , Sr. Hydrologist/ Vice President, 1994-1997

Geomatrix Consultants, Inc., San Francisco, CA, Project Geologist/Hydrogeologist, 1991-1994

Environ International Corporation, Princeton, NJ, Sr. Staff Geologist/Hydrogeologist, 1989-1991

Miami University, Oxford, OH, Field Camp Instructor and Research Assistant, 1986-1989

Greg Kamman is a professional geologist and certified hydrogeologist with over 30 years of technical and consulting experience in the fields of geology, hydrology, and hydrogeology. He specializes in directing and managing projects in the areas of surface and groundwater hydrology, stream and tidal wetland habitat restoration, water supply and water quality assessments, water resources management, and geomorphology. Mr. Kamman has worked extensively throughout California's coastal watersheds and estuaries, and on multiple projects in Oregon and Hawaii.

Mr. Kamman's experience and expertise includes evaluating surface and groundwater resources and their interaction, stream and wetland habitat restoration assessments and design, characterizing and modeling basin-scale hydrologic and geologic processes, assessing watershed hydraulic and geomorphic responses to land-use change , and designing and conducting field investigations characterizing surface and subsurface hydrologic and water quality conditions. Greg commonly works on projects that revolve around sensitive fishery, wetland, wildlife, and/or riparian habitat enhancement within urban and rural environments. Mr. Kamman performs many of these projects in response to local, state (CEQA) and federal statutes (NEPA, ESA), and other regulatory frameworks. Mr. Kamman frequently applies this knowledge to the review and expert testimony on state and federal water operation plan EIR/EIS reports, Groundwater Sustainability Plans, Habitat Conservation Plans, and biological assessments.

Mr. Kamman is accustomed to working multi-objective projects as part of an interdisciplinary team including biologists, engineers, planners, architects, lawyers, and resource and regulatory agency staff. Mr. Kamman is a prime or contributing author to over 360 technical publications and reports in the discipline of hydrology, the majority pertaining to the protection and enhancement of aquatic resources. Mr. Kamman has taught the following courses: stream restoration through U.C. Berkeley Extension (2001-2008); wetland hydrology through San Francisco State University's Romberg Tiburon Center (2007 and 2012-2014); and presented webinars (2020) to California Water Boards staff on hydrologic and hydraulic modeling. He has devoted his career to the protection, enhancement and sustainable management of water resources and associated ecosystems.

SELECTED EXPERIENCE

Floodplain Management Projects

Flood Reduction, Mitigation Planning, and Design on Yreka Creek, Siskiyou County, CA
City of Yreka as subcontractor to WRA, Inc., 2008-2010

Mr. Kamman completed a series of field and hydraulic model investigations for restoration planning and design along Yreka Creek to reduce flood hazards and potential damage to the City's water treatment plant and disposal field infrastructure. This work also addresses and satisfies dike repair mitigation conditions stipulated by state resource agencies. While achieving these goals, Mr. Kamman tailored analyses and study objectives to assist the City in: enhancing the ecological floodplain restoration along Yreka Creek; providing opportunities for expanded public access and trail planning consistent with the goals of the Yreka Creek Greenway Project; and improving the water quality of Yreka Creek.

Key elements of this work included: review and synthesize existing information; identify and analyze the feasibility for three conceptual alternatives; and conceptual design and report preparation. Funding for implementation of restoration work over such a large area was a significant concern to the City. Therefore, designs identify and define phasing in a fashion that gives the City flexibility in implementation.

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SELECTED EXPERIENCE *(CONTINUED)*

West Creek Drainage Improvement Assessment, Marin County, CA
Marin County Flood Control, 2006-2008

Mr. Kamman prepared a study focused on characterizing existing flood conditions and developing and evaluating flood reduction measures along West Creek in Tiburon. The work was completed through the implementation of hydrologic and hydraulic feasibility and design assessments. The conceptual design and analysis of potential flood reduction strategies (alternatives) was completed through the development of a HEC-RAS hydraulic model that simulates historic, existing and proposed project flood conditions. It was intended that the conceptual design developed under this scope of work would be of sufficient detail and quality to initiate project permitting and the environmental compliance process and documentation. Opportunities for riparian corridor and aquatic habitat enhancement were also considered and integrated into the conceptual design. Mr. Kamman also developed and assessed six alternative flood hazard reduction measures. The hydraulic model results for each alternative were compared against baseline conditions in order to evaluate their ability to alleviate flood hazards.

Gallinas Creek Restoration Feasibility Assessment, Marin County, CA
San Francisco Bay Institute, 2003-2005

Mr. Kamman completed a feasibility assessment for restoration of Gallinas Creek in northern San Rafael. Restoration will require removal of a concrete trapezoidal flood control channel and replacement with an earthen channel and floodplain in a “green belt” type corridor. Work included the collection of field data and development of a HEC-RAS hydraulic model to evaluate and compare existing and proposed project conditions. Designs must continue to provide adequate flood protection to the surrounding community. The study also includes and evaluation of existing habitat values, potential habitat values, and restoration opportunities and constraints.

Hydrologic and Hydraulic Evaluation for Trinity County Bridge Replacement, Trinity County, CA
Trinity County Planning Department, 2002

Mr. Kamman completed technical peer review of peak flow estimates and hydraulic design parameters associated with the replacement of 4 bridges across the upper Trinity River in Trinity County, California. A primary study component was accurately predicting the magnitude and frequency of flood releases from Trinity Dam. Numerous flood frequency analytical approaches were evaluated and used throughout this study.

Restoration of Lower Redwood Creek Floodway and Estuary, Humboldt County, CA
California State Coastal Conservancy and Humboldt County DPW, 2002-2003

Mr. Kamman provided technical review for the development of a hydraulic model to evaluate river and estuary restoration alternatives along the lower portions of Redwood Creek between Orrick (Highway 1) and the Pacific Ocean. This work was completed to evaluate the feasibility for creek/estuary restoration alternatives developed by the County, and effects on flood hazards along this flood-prone reach.

In order to better address and evaluate the current flood hazards along the entire floodway and identify potential flood hazard reduction measures, Mr. Kamman was retained to update HEC-2 models previously prepared by the Army Corps, and to evaluate the impacts of vegetation encroachment (increased roughness) and sediment deposition on floodway conveyance. Mr. Kamman expanded the Corps hydraulic model with newly completed channel surveys and channel roughness observations. The impetus for this work was to assist the County in identifying mutually beneficial strategies for ecosystem restoration and flood hazard reduction. Technical work was completed under close coordination and communication with county engineers. Study results and findings were presented at public meetings of local area landowners and stakeholders.

Tembladero Slough Small Community Flood Assessment, Monterey County, CA
Phillip Williams & Associates, Ltd., 1997

Mr. Kamman completed a flood information study of Tembladero Slough near Castroville on behalf of the San Francisco District Corps of Engineers. The purpose of this work was to identify and document local flood risks existing in the community and propose potential floodplain management solutions as part of the Corps 1995/1997-flood recovery process. Work centered on conducting a field reconnaissance, reviewing available historical data, and conducting discussions/interviews with local landowners and agency personnel.

Fluvial Projects

Muir Woods National Monument Bank Stabilization Plan for Conlon Creek, Marin County, CA
Golden Gate National Parks Conservancy (GGNPC), 2018-present

Mr. Kamman developed a grading and drainage plan for the Conlon Avenue Parking Lot, located adjacent to Redwood Creek and sensitive Coho salmon habitat. More recently, he has assisted GGNPC and the NPS in assessing the planning and design for creek bank stabilization and ecological enhancement at a failed culvert on a tributary channel at the project site. This work includes constructing a HEC-RAS model to evaluate: culvert removal and channel design; fish passage; and water quality impacts. Work is currently in development of 50% engineering design.

Hydrology and Hydraulic Assessments for Design of Butte Sink Mitigation Bank Project, Colusa County, CA
WRA, Inc., 2017-2018

Mr. Kamman was retained to provide hydrology and hydraulic modeling support in the development of design and Draft Prospectus for the Butte Sink Mitigation Bank (Bank). This work entailed developing the necessary hydrology information, hydraulic model and documentation to support further design, environmental compliance and agency approvals/permitting of the Bank. The main objective of work was to develop a design that provides the necessary ecological conditions and functions for successful establishment and operation of the Bank.

Lagunitas Creek Salmonid Winter Habitat Enhancement Project, Marin County, CA
Marin Municipal Water District, 2013-2018

Mr. Kamman designed and led a study to evaluate opportunities to enhance winter habitat for coho and other salmonids in Lagunitas Creek and its largest tributary - Olema Creek. This work was done as a two-phase assessment and design effort. The first phase (completed in 2013) included a winter habitat assessment to evaluate existing juvenile salmonid winter habitat in Lagunitas Creek and lower Olema Creek. The results of this assessment were used to prioritize winter habitat needs, and identify opportunities for winter habitat enhancement to increase

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SELECTED EXPERIENCE *(CONTINUED)*

the winter carrying capacity of coho salmon and steelhead. The second phase (completed in 2017) consisted of a designing winter habitat enhancements. These enhancements focused on restoring floodplain and in-channel habitat structures. Winter habitat enhancement work also needed to consider potential impacts to or benefits for California freshwater shrimp (Syncaris pacifica), a federally endangered species.

This work included field reconnaissance, topographic surveys and the preparation of final design drawings at nine different project sites. An overall self-maintaining design approach was developed to guide individual project plan, with minimal earthwork and disturbance to existing riparian and wetland habitat. Self-sustained, natural evolution of a multi-thread channel within a more active floodplain is a desired outcome of project actions. Design elements and structures are intended to enhance or restore natural hydrologic processes to promote geomorphic evolution of more active high flow (side) channels and floodplain. Design elements include construction of 24 individual log structures.

Lower Miller Creek Management and Channel Maintenance, Marin County, CA

Las Gallinas Valley Sanitary District, 2013-2015

Mr. Kamman was commissioned to formulate and implement a plan for sediment removal and improved flood flow conveyance in the Lower Miller Creek channel. The need for improved flood and sediment conveyance is driven by the following factors. Progressive accumulation of course sediment in the project reach had reduced area wide discharge efficiencies along Miller Creek and at District outfalls. The District had an immediate need to dredge Lower Miller Creek to protect existing operations and facilities. Miller Creek supports a population of federally listed Steelhead, and adjacent wetland areas potentially support other state and federally listed special status species. Therefore, permitting requirements and cost efficiency required minimizing the extent and frequency of channel excavation/maintenance that may adversely impact habitats in the wetland and riparian corridor.

The design objective of the project was to define and optimize an integrated channel maintenance, flood, and sediment management plan, that protects existing facilities from stream and coastal flood hazards. The plan's objective was to minimize costs and ecological impacts of future anticipated and designed maintenance activities required under District operations. Working with District Staff, Mr. Kamman developed a suite of potential project alternatives and identified a preferred approach. Mr. Kamman completed all CEQA compliance (IS/MND) and permitting. Mr. Kamman also managed and directed development of engineered drawings and assisted in bid document preparation.

Mr. Kamman provided site assessment, long term management planning and channel maintenance support to the Sanitary District to maintain flood conveyance, manage sediment aggrading at District outfalls, and improve ecological values in the intertidal Bayland reaches of Miller Creek. The creek supports multiple federal and state listed endangered species. Initial work included completing hydraulic and geomorphic assessments to characterize causes of channel aggradation, and quantify sediment yields. Assessments included evaluation of climate change impacts on habitat and flood hazards, and water quality modeling of District outfalls to quantify tidal exchange and dilution. Based on this analysis and supporting biological resource assessments, Mr. Kamman identified alternatives for channel maintenance, performed a cost benefit assessment of dredging alternatives, and is assisted the District in developing short and long term management objectives. Mr.Kamman also led a multidisciplinary design team in the preparation of engineering plans and specifications as well as permits and environmental compliance documents.

Vineyard Creek Channel Enhancement Project, Marin County, CA

Marin County Department of Public Works, 2007-2013

Mr. Kamman managed the preparation of designs and specifications for a flood conveyance and fish habitat and passage improvement project on Vineyard Creek. Creek corridor modifications included replacing the box culvert at the Center Road crossing with a free span bridge or bottomless arch culvert (civil and structural design by others), providing modifications to the bed and bank to eliminate erosion risks to adjacent properties and improve water quality, promoting active channel conveyance of both water and sediment, and providing improved low and highflow fish passage, improved low flow channel form and enhanced in-stream habitat, repairing eroding banks, and expanding/enhancing adjacent channel floodplains. The riparian corridor was replanted to provide a low-density native understory, "soft" bank erosion protection, and increased tree canopy along the tops of banks. Mr. Kamman prepared the JARPA for the project and conducted permit compliance and negotiations with all participating resource agencies. Designs and permitting also address the known presence of Native American artifacts. This work was contracted under an expedited design schedule and phased construction was initiated the summer of 2008 and continued the summer of 2009.

Bear Valley Creek Watershed and Fish Passage Enhancement Project, Marin County, CA

The National Park Service and Point Reyes National Seashore Association, 2005-2013

Working on behalf of the NPS and PRNSA, Mr. Kamman completed a watershed assessment and fish passage inventory and assessment for Bear Valley Creek. Work included a geomorphic watershed assessment and completing field surveys and hydraulic modeling (including flood simulations) of ten road/trail crossings to identify and prioritize creek and watershed restoration efforts while considering and addressing current flooding problems at Park Headquarters – a major constraint to channel restoration efforts that would likely exacerbate flooding. Mr. Kamman also completed a suite of conceptual restoration designs (Phase 1) including: the replacement of two county road culvert crossings with bridges; channel creation through a ponded freshwater marsh (former tidal marsh); and replacement of 4 trail culverts with prefabricated bridges; and associated in-channel grade control and fishway structures. Engineered drawings and specifications were also developed for some of these sites to assist PORE with emergency culvert replacements after damages sustained during the New Year's Eve flood of 2005. Mr. Kamman also directed geotechnical, structural and civil design of project components.

Two projects were completed in 2006 on emergency repair basis resulting from flood damages suffered during the New Year's Eve storm of 2005. The two most recent projects were constructed in 2013, consisting of a large bank repair and adjacent to main access road/trail and culvert replacement further upstream on same road. The bank repair utilized bioengineering approaches including engineered log revetments and log diversion vanes.

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Kellogg Creek Restoration Project, Contra Costa County, CA
Olberding Environmental on behalf of the Contra Costa County Water District, 2012-2013

Mr. Kamman led the development of PS&E to restore 3,000 linear feet of riparian and associated creek corridor habitat. Project was designed as compensatory mitigation for direct and indirect impacts to jurisdictional waters from the Los Vaqueros Reservoir Expansion Project that Contra Costa Water District. Work included field investigations and data analysis to characterize hydrologic/ geomorphic conditions and numerical modeling to optimize desired inundation and hydroperiods. Work was completed under subcontract to.

Miller Creek Sanitary Sewer Easement Restoration, Marin County, CA
Las Gallinas Valley Sanitary District, 2010

Working on behalf of the District, Mr. Kamman completed field surveys and technical feasibility studies to develop engineering plans and specifications for a stream bank restoration project to protect an exposed sanitary sewer pipeline, stabilize incised banks, and promote an ecologically healthy stream corridor along an approximately 50 linear foot damaged reach of Miller Creek. The design includes backfill and materials to accommodate construction of a vegetated stabilized slope. The eroded bank repair included design of a 1:1 Envirolok vegetated slope with geogrid reinforced soil lifts extending eight to ten feet back from the slope face. One-quarter-ton rock will be placed in front of the Envirolok wall at the toe of the reconstructed bank to provide added scour protection. In order to perform the work, the project site will be dewatered. An existing felled tree perpendicular to the creek flow will be relocated and secured into the right creek bank with root wad remaining in active channel. All work on the bank and within the creek bed must be completed pursuant to project permits due to presence of steelhead trout.

California Coastal Trail Planning and Design at Fitzgerald Marine Reserve, San Mateo County, CA
WRA, Inc., 2008-2009

Mr. Kamman provided hydrology and hydraulics expertise in the planning and design for the 0.25-mile segment of the California Coastal Trail at the Fitzgerald Marine Reserve. The project was overseen by the San Mateo County Parks Department. This segment of Coastal Trail provides improved access from the trailhead to the beach as well as a free span bride over Vicente Creek. Greg completed the field surveys and hydraulic modeling to assist an interdisciplinary team to design the project. Understanding the hydrology of Vicente Creek and quantifying flood conditions was critical to successfully designing and constructing the free span bridge. He also evaluated how creek hydrology and coastal wave processes interact at the beach outfall in order to identify opportunities and constraints to beach access improvements (which will include crossing the creek on the beach) during both wet and dry season conditions in order to evaluate both permanent and seasonal crossing design alternatives.

Hydrologic Assessment and Conceptual Design for Conservation and Wetland Mitigation Bank Project, Stanislaus County, CA
WRA, Inc., 2009

Working as a subcontractor to WRA, Inc., Mr. Kamman provided hydrology, geomorphology and engineering support for the planning and design for a Conservation and Wetland Mitigation Bank on the San Joaquin River, in the Central Valley near Newman, California. The property is currently owned by the Borba Dairy Farms. The primary objective of the study was to characterize the hydrologic and geomorphic controls on the spatial distribution of habitat types. To meet this objective, Mr. Kamman's assessment included: (1) collecting and synthesizing hydrologic data to characterize existing and historic streamflow, geomorphic and shallow groundwater conditions; (2) filling a data gap by collecting topographic data of hydrologic features; (3) developing a hydraulic model capable of predicting water surface profiles for a range of design flows; and (4) quantifying the linkage between surface water/groundwater conditions and specific vegetation communities and habitat types through implementation of reference site assessments. Mr. Kamman also provided conceptual design and permitting support in evaluating habitat enhancement and creation opportunities on the site.

Redwood Creek Floodplain and Salmonid Habitat Restoration, Marin County, CA
Golden Gate National Recreation Area and Golden Gate Parks Conservancy, 2005-2008

Mr. Kamman lead development of a preferred project alternative and final project design drawings and specifications for a floodplain and creek restoration and riparian corridor enhancement effort on lower Redwood Creek above Muir Beach at the Banducci Site. A primary objectives of the project was to: improve salmonid passage/rearing/refugia habitat; riparian corridor development to host breeding by migratory song birds; and wetland/pond construction to host endangered red-legged frog. The preferred design includes: excavation along the creek banks to create an incised flood terrace; engineered log deflector vanes; removing and setting back (constructing) approximately 400-feet of levee; creating in- and off-channel salmonid rearing and refugia habitat; reconnecting tributary channels to the floodplain; and creating California red-legged frog breeding ponds. Designs were completed in 2007 and the project constructed in the summer of 2007.

Considerable hydraulic modeling was completed to evaluate and develop means to help reduce chronic flood hazards to surrounding roadways and properties. Alternatives that included set-back levees and road raising were developed and evaluated. Detailed and careful hydraulic (force-balance) analyses and computations were completed as part of engineered log deflector designs. These were unique and custom designed structures, building on past project efforts and in consultation with other design professionals.

This project demonstrates Mr. Kamman's ability to work closely with the project stakeholders to develop a preferred restoration alternative in a focused, cost-effective and expedited fashion. This was achieved through close coordination with the NPS and the effective and timely use of design charrette-type meetings to reach consensus with participating stakeholders. Conceptual through full PS&E were completed on-time and on-budget in 2007 and was project constructed in the fall of 2007. Mr. Kamman worked closely with NPS staff to "field fit" the project, by modifying grading plans to protect existing riparian habitat. Mr. Kamman also provided construction management and oversight to floodplain grading and installation of engineered log structures. Based on field observations, the project is performing and functioning as desired.

Pilarcitos Creek Bank Stabilization Project, San Mateo County, CA
TRC Essex, 2006-2007

Mr. Kamman directed field surveys and technical modeling analyses to develop restoration design alternatives for a Bank Stabilization Project on Pilarcitos Creek

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in unincorporated San Mateo County, California. This work included hydrology and hydraulic design and preparation of plan sheets and technical specifications as well as a revegetation plan. Due to the importance of protecting an existing gas mainline, the design package will be completed in close coordination with TRC Essex geotechnical staff and revegetation subcontractor and PG&E civil staff. Design feasibility analyses focused on developing hydraulic design criteria for the project, including: estimates of design flood flow magnitudes (2-, 5-, 10-, 25-, 50- and 100-year floods); water surface elevation estimates for a suite of design floods; associated average channel velocities and shear stresses; and estimates for riprap sizing for channel bank toe protection. Plan sheets, technical specifications and cost estimates were provided for review and approval.

Watershed Assessments

Evaluation of Project Impacts on Oregon Spotted Frog, Klamath County, OR
Oregon Water Watch and Earthjustice, 2016-2019

Mr. Kamman designed a suite of hydrologic, hydraulic and geomorphic studies to evaluate proposed change operations of the Crane Prairie, Wickiup and Crescent Lake dams and reservoirs as related to harm to Oregon spotted frogs. Work began with analyzing impacts associated with proposed water delivery operations and developing a proposed alternative prioritizing protection and enhancement of frog habitat. This work followed with a technical review and critique of the USFWS's Biological Assessment. Work included preparation of four declarations for the clients.

Tennessee Hollow Creek Riparian Corridor Restoration, San Francisco County, CA
Presidio Trust, 2001-present

Mr. Kamman has been leading and assisting the Trust and Golden Gate National Recreation Area (GGNRA) in the planning and design on over a dozen multi-objective riparian corridor restoration and watershed management projects in the Tennessee Hollow/Crissy Marsh watershed since 2001. Specific project objectives include: daylighting creeks; riparian corridor restoration; expanding Crissy Marsh; enhancing recreation, education, archeological, and cultural resource opportunities; improving water quality discharges to San Francisco Bay; and remediation of numerous landfills within the watershed. Typical initial phases of work focus on characterizing surface and groundwater conditions within each project area and identifying opportunities and constraints to restoration of natural wetlands and creek/riparian corridors. Notable challenges of this work include restoring heavily disturbed natural resources in an urban setting while integrating designs with recreation, archeology/cultural resources, education and remediation programs. Mr. Kamman has acted as lead hydrologist and designer on eight separate reaches in the 271-acre Tennessee Hollow Creek watershed and several other projects within and in the vicinity of Mountain Lake.

All task authorizations under these on-call and individual design contracts and included hydrology and water quality assessments and conceptual restoration planning and design. The project areas overlapped both the Presidio Trust and NPS-GGNRA management areas. Preliminary construction cost estimates for project alternatives within the Tennessee Hollow watershed range from $10- to $20- million. Several restoration projects are also tied to providing mitigation for the current San Francisco Airport expansion and Doyle Drive Seismic Improvement projects. Several projects have been constructed since 2012 (Thompson's Reach, El Polin Loop), two projects (East Arm Mtn. Lake and YMCA Reach) were constructed in 2014, and MacArthur Meadow restoration in 2016.

This work illustrates the Mr. Kamman's ability to complete a broad variety of hydrologic analyses, including: multiple years of rigorous and thorough surface water and groundwater hydrologic and water quality monitoring throughout the entire watershed to characterize and quantify existing hydrologic conditions; development of a detailed watershed-scale water budget for existing and proposed land-used conditions (capturing existing and proposed vegetation cover types and land use activities) to calculate groundwater recharge estimates input into the numerical watershed model; preparation of EA sections on water resources and water quality (NEPA compliance) regarding Environmental Conditions, proposed Impacts, and Proposed Mitigations associated with the project; preparing detailed alternative plans; and coordination and preparation of engineered plans/specifications for construction. All work was completed on budget and in a timely fashion.

Mountain Lake Water Budget, San Francisco County, CA
Presidio Trust, 2012-2017

Mr. Kamman was retained to develop a water balance model for Mountain Lake in the Presidio of San Francisco. Through development of a water balance model, the Trust seeks to understand: the major source(s) of inflow to both Mountain Lake; anticipated seasonal (monthly) changes in water level relative to various outflow assumptions; and the relationship of surface and groundwater interaction. This information gained from this study will be used to: 1) better understand and manage lake levels for ecological habitats; 2) identify flood storage capacity of Mountain Lake and fluctuations in lake level under various storm conditions; 3) better understand and maintain wetland habitat in the east arm; and 4) complete mass balance calculations to assess water quality in and feeding into the lake.

To implement this study, Mr. Kamman developed a water budget model to identify and quantify the primary water inputs and outputs to the lake and determine major controls over water storage. Primary water budget variables analyzed includes: precipitation; evaporation/evapotranspiration; groundwater exchange; and surface runoff. This study also included a long-term field investigation completed between 2012 and 2016 to: identify all point source inputs such as culverts and drainage outlets; identify diffused surface runoff inputs from surrounding lands, including a golf course; better characterizing the function and performance of the primary lake outfall structure; monitor groundwater levels surrounding the lake; and continuously monitor lake water level and storage over a mult9i-year period. These data were used to quantify water budget variables used to build the water budget model. Precipitation and barometric pressure data used in the model was provided by the Trust maintained weather station. Model daily evaporation estimates came from a variety of local area gauges maintained by state agencies.

The water budget model developed for this study is successful in accurately simulating historic water level conditions. The model using a daily time-step appears more accurate than model using a weekly time-step, but both provide reasonable agreement with observed conditions. The model is highly sensitive to groundwater exchange with the lake. The water budget is also a proven useful tool for the design and analysis of improvements to the lake outfall structure and establishing flood storage needs to protect the adjacent highway.

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Cordilleras Creek Hydrologic Assessment, San Mateo County, CA
City of Redwood City, 2002-2003

Mr. Kamman assisted the Cordilleras Creek Watershed Coordinator in planning, seeking funding, and implementing a hydrologic and biologic assessment of the Cordilleras Creek watershed. Work completed included completing a full creek reconnaissance and channel stability assessment, preparation of a watershed assessment work plan, presentations at public meetings, and study/review of flooding issues in the watershed. Challenges faced in this predominantly privately owned watershed include removal of numerous fish passage barriers and educating/coordinating property owners.

Capay Valley Hydrologic and Geomorphic Watershed Assessment, Yolo County, CA
Yolo County RCD, 2008-2010

Mr. Kamman designed and supervised a hydrologic, geomorphic watershed assessment, and conceptual restoration design for the Capay Valley segment of Lower Cache Creek . Funding for the project was from a CALFED Watershed Program grant. The Capay Valley reach of Cache Creek experiences considerable stream bank erosion, which contributes to downstream sedimentation. The channel instability also threatens adjacent homes and can negatively impact the riparian habitat along the creek that functions as an important wildlife corridor from the Western Coastal Range to the Yolo Bypass. Additionally, a significant proportion of methylmercury transported into the Bay-Delta originates from the Cache Creek watershed. The main goal of this proposed study is to address both the causes and the aforementioned consequences of bank erosion.

The assessment was designed to evaluate and quantify changes in hydrologic and geomorphic conditions in response to historical changes in land-use and water development (e.g., diversions, reservoir construction, groundwater pumping, etc.). This assessment also evaluated how historic human induced changes in hydrologic and geomorphic conditions affect riparian ecology in terms of the lost or altered floodplain area, character, and inundation frequency. A key product of this assessment was to distinguish between “natural” and “accelerated” bank erosion, and to identify the underlying causes (both natural and anthropogenic) so that appropriate solutions can be developed. Desired outcomes of the study included: reduce bank erosion by developing restoration designs for typical trouble sites; produce a ranking system to prioritize sites for stabilization and restoration; contribute to community education through watershed science education and the Yolo STREAM Project outreach program; improve water quality through reduction in accelerated erosion; and contribute to riparian corridor restoration and support the RCD’s Wildlife Conservation Board funded efforts to remove non-native tamarisk and around from the creek corridor. Work was completed through a broad spectrum of field and analytical investigations that received close review by the RCD, stakeholders, and a Technical Advisory Committee.

Ventura River Unimpaired Flow and Habitat Assessment, Ventura County, CA
City of Buenaventura and Nautilus Environmental, 2006-2007

Mr. Kamman completed a hydrology feasibility assessments as part of evaluating the reuse of Ojai Valley Sanitary District (OVSD) effluent for other beneficial uses. Currently, OVSD discharges treatment plant effluent to the lower Ventura River. The City and OVSD recognize that the reduction in the discharge of treated effluent to the Ventura River could have an environmental effect on sensitive and endangered species. In light of these concerns, this study was conducted to determine if a reuse project is feasible without significant environmental harm.

The assessment included hydrologic and geomorphic field and analytical assessments of past (unimpaired), current and proposed surface and groundwater flow conditions over a wide range of dry- through wet water year-types. The main objective if these analyses was to determine the linkage to water quality and aquatic habitat conditions including: flow durations; extent of gaining vs. losing reaches; low flow inundation/wetted area; and influence on barrier beach dynamics. Mr. Kamman collaborated with a team of other professionals to prepare a facility plan documenting the analyses and conclusions of respective water recycling investigations.

Hydrologic Analysis of FERC Minimum Flows on Conway Ranch Water Rights, Mono County, CA
Law Office of Donald Mooney, 2001-2002

Mr. Kamman completed a hydrologic analysis to evaluate if FERC’s proposed Minimum Flow Plan for Mill Creek would interfere with the exercise of the Conway Ranch’s water rights from Mill Creek. The approach to this analysis was to quantify the duration of time the Conway Water right was met under historic gaged and simulated proposed Minimum Flow Plan conditions. The primary objective of the analysis was to evaluate impacts during the winter period when flows are typically limited due to water storage as snow pack. Minimum Flow Plan conditions were simulated by developing a spreadsheet model that redistributes actual (historic) Lundy Lake releases in a fashion that maintains a minimum flow of 4 cfs to Mill Creek to accommodate the downstream Southern California Edison’s (SCE) power plant. The analysis period for both historic and simulated Minimum Flow Plan conditions consisted of water years (WY) 1990 through 1998 to capture an exceptionally diverse range of wet and dry year-types.

The primary method used to quantify changes in flow between historical and simulated Minimum Flow Plan conditions was to prepare and compare flow duration curves for each condition during both the winter and summer periods during a variety of water year types. Model results were tabulated for each conditions to determine the differences in the percentage of time target flows were equaled or exceeded. Based on these findings, Greg was contracted to complete more in-depth monthly modeling.

Groundwater Management Projects

Assessments of Groundwater-Surface Water Interaction, Stanislaus County, CA
The Law Offices of Thomas N. Lippe, APC and California Sportfishing Protection Alliance, 2015-present

Since 2015, Mr. Kamman has been assessing groundwater conditions within Stanislaus County and evaluating potential impacts of groundwater pumping on surface water flow and aquatic habitat of the Stanislaus, Tuolumne and San Joaquin Rivers. Mr. Kamman completed a comprehensive review and synthesis report of available groundwater and interconnected surface water (ISW) reports and data. Using available soils, geology and hydrology information, Mr. Kamman also delineated and mapped subterranean streams and Potential Stream Depletion Areas (PSDAs) to identify stream corridors susceptible to adverse impacts from groundwater pumping. This information is intended to help Groundwater Sustainability Agencies identify potential impacts to ISW.

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Most recently, Mr. Kamman has been retained to review and comment on 7 Groundwater Sustainability Plans (GSPs) for critically overdraft groundwater subbasins within or adjacent to Stanislaus County. This review focused on how GSPs address Groundwater Dependent Ecosystems (GDE) and ISW. Comments included recommendations on monitoring and study plans to identify and quantify impacts of groundwater pumping on stream flow rates and associated ecological habitats.

Assessment of Surface Water-Groundwater Interaction, Humboldt County, CA
Friends of the Eel River (FOER), 2020-present

Mr. Kamman is currently providing technical assistance in understanding surface water-groundwater interactions in the Lower Eel River Valley. Work includes reviewing and synthesizing available reports and hydrologic data and providing a science-based opinion on the role groundwater plays in supporting stream flow and aquatic habitats. This analysis addresses conditions and changes associated with seasonal and long-term wet-dry cycles. Data gaps will be identified and documented during the analysis.

This work is being completed to support FOER efforts at protecting aquatic resources within the framework of current water management practices and the public trust doctrine under California law. Additionally, this work includes providing hydrologic and hydrogeologic review, comment and recommendations during development of the basin's Groundwater Sustainability Plan (GSP) under the California Sustainable Groundwater Management Act (SGMA).

Scott Valley Subbasin Technical Hydrogeologist Assistance, Siskiyou County, CA
Klamath Tribal Water Quality Consortium and Quartz Valley Indian Reservation, 2019-present

Mr. Kamman is providing technical review and comment on the groundwater models and associated studies in the Scott Valley groundwater subbasin under the Sustainable Groundwater Management Act (SGMA) process. Work includes: review of groundwater models; synthesis and review of available groundwater quality data; assisting to identify constituents of concern; and review of the planning and technical studies being used to develop a basin Groundwater Sustainability Plan (GSP).

Middle Russian River Valley Shallow Groundwater Storage Enhancement Study, Sonoma County, CA
Friends of the Eel River, 2016

Working on behalf of Friends of the Eel River, Mr. Kamman completed a study to identify and quantify the volume of recoverable aquifer storage along two independent 6-mile reaches within the alluvial fill valley of the Russian River. The approach to this study was to quantify how channel incision has reduced shallow groundwater levels and quantify how much aquifer storage can be increased if channel bed elevations are restored to historic levels. The goal of this investigation was to identify feasible approaches to increase groundwater storage that would off-set losses associated with the termination of out-of-basin diversions from the Eel River. This work was completed through: intensive review and mapping of available groundwater level data; quantification of aquifer hydraulic properties; and calculating the shallow aquifer storage volume. In total, reclaiming the shallow aquifers within these two areas yield a total added storage volume of over 20,000 AF.

Green Gulch Farm (GGF)/Zen Center Water Resources Investigation, Marin County, CA
Green Gulch Farm, 1998-2019

Mr. Kamman completed a multi-phase study to evaluate the short- and long-term water uses and resources at GGF. Work was initiated by developing comprehensive water usage/consumption estimates and assessing available water resources, including spring, surface water, and ground water sources. Water demand estimates included quantifying potable and agricultural water usage/demands. Once reliable water supplies were identified and water usage/demand figures calculated, Mr. Kamman provided recommendation for improvements to water storage and distribution systems, land-use practices, conservation measures, treatment methods, waste disposal, and stream and habitat restoration. The initial phase of work included: in-depth review of available reports and data; review of geology maps and aerial photography; review of water rights and historic land use records; field reconnaissance including year-round spring flow monitoring; mapping and quantifying existing runoff storage ponds; and surface water peak- and base-flow estimates.

The second phase of work included identification of possible groundwater sources and siting and installation of production wells. This included sighting three drilling locations, obtaining County and State well drilling permits for a domestic water supply; coordination and oversight of driller; and directing final well construction. Upon completion of a well, Mr. Kamman directed a well pumping yield test and the collection and analysis of water quality samples (including Title 22) for small water supply system use. The final phase of work included assisting GGF with water treatment system options at the well head and integration of the groundwater supply into an existing ultra-violet light treatment system servicing spring water sources. Work was completed in 2000 with a budget of approximately $25,000, including all driller and laboratory subcontracting fees.

Stanford Groundwater Assessments, Santa Clara County, CA
Stanford University Real Estate Division, 2012-2016

Mr. Kamman provided technical hydrogeologic services to evaluate groundwater conditions and drainage requirements associated with the construction of several new facilities on or near Page Mill Road. The main objective of this study is to determine the seasonal depth to groundwater beneath the project site under existing and potential future conditions and provide an opinion on if the project is required to comply with the City of Palo Alto, Public Works Engineering Basement Exterior Drainage Policy (effective October 1, 2006). This work included obtaining and reviewing available technical reports, maps and literature pertaining to groundwater conditions in the project vicinity. Based on this review, we have prepared a letter report of findings and recommendations.

Bodega Bay Wetland Water Supply, Sonoma County, CA
Friends of Bodega Bay, 2007

Mr. Kamman Conducted an evaluation of the groundwater underflow feeding a large coastal wetland in Bodega Bay and recommended mitigation measures for potential losses in supply associated with proposed residential development in recharge areas. Work included: long-term monitoring of ground water quality and supply; monitoring surface water and spring flow and water quality; assessing and characterizing the interaction between surface and subsurface water sources during different seasons and water year-types; developing a detailed water budget for the site to assess impacts to recharge areas; and developing a number of physical solutions to mitigate for recharge losses.

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L.A. Department of Water and Power, Groundwater Recharge Facility Operation Study, Los Angeles County, CA
ICF Consulting, 2006

Working as a subcontractor to ICF Consulting of Laguna Niguel, California, Mr. Kamman provided technical assistance in the hydraulic modeling of sediment accumulation in selected spreading ground facilities owned and operated by the Los Angeles Department of Public Works. The object of this work is to evaluate changes in infiltration and groundwater recharge rates over time within the spreading grounds in association with sediment accumulation from turbid waters.

Corde Valle Golf Club Surface-Groundwater Interaction Study, Santa Clara County, CA
LSA Associates, 2004

On behalf of LSA Associates of Pt. Richmond, CA, Mr. Kamman completed a 3rd party independent review of available reports and data sets (boring logs, well water levels, groundwater quality, aquifer pump-test, and surface water monitoring) to evaluate if pumping of the Corde Valle irrigation well is adversely impacting flow in West Llagas Creek. This investigation was implemented in response to a concern expressed by California Department of Fish and Game staff regarding the potential for differential drying of the West Branch of Llagas Creek along Highland Avenue. The analysis was also complicated by the likely effects of pumping from surrounding off-site wells.

Aquifer Testing for Tennessee Hollow Watershed Project, San Francisco County, CA
Presidio Trust, 2002

The Mr. Kamman assisted in the design and implementation of an aquifer test at the Presidio of San Francisco. We prepared an aquifer test work plan and conducted step-drawdown and constant-rate aquifer tests at the site using both manual and electronic data collection methods. This work included interpretation of the aquifer test results using software-based solution methods and prepared a written summary of methods and findings. In addition, Mr. Kamman located, coordinated and managed a drilling effort for the logging and installation of several groundwater monitoring wells in the project area to address identified data gaps.

San Joaquin River Riparian Corridor Restoration Project, San Joaquin Valley, CA
McBain-Trush, 2002

Mr. Kamman completed an assessment of historic and existing shallow groundwater conditions beneath and adjacent to the San Joaquin River between Friant Dam and the Merced River. This work focused on reviewing available reports and flow/groundwater- level data to characterize surface water and groundwater interaction and implications for riparian vegetation, water quality and fishery habitat restoration. Hydrologic analyses were performed to identify the location and seasonal evolution of losing and gaining reaches an implication on future restoration planning and design efforts. The main deliverable for this analysis was a report section focused on describing the historical changes in regional and local groundwater conditions in the San Joaquin Valley and evolution of anthropogenic activities (e.g., groundwater withdrawals, irrigation drainage systems and return flows, development of diversion structures, changes in land-use; and introduction of CVP/State Water Project deliveries) and associated impacts on deep/shallow groundwater levels, surface water flows, and surface and groundwater quality.

Tidal, Estuarine & Coastal Projects

Quartermaster Reach Wetland Restoration Project, San Francisco County, CA
Presidio Trust, 2006-present

Mr. Kamman was retained in 2006 as part of a multi-disciplinary team to develop restoration alternative designs for a 10-acre filled and paved site marking the historic confluence of Tennessee Hollow Creek and Crissy Marsh adjacent to San Francisco Bay. The Trust's planning documents define the main objectives for Tennessee Hollow restoration as: a) "Restoration [of Tennessee Hollow] will expand riparian habitat and allow for an integrated system of freshwater streams and freshwater, brackish, and tidal marsh, re-establishing a connection to Crissy Marsh" and b) "Restore and protect Tennessee Hollow as a vibrant ecological corridor". The project is located within the setting of a National Park and a National Historic Landmark District. Thus, another goal for the project is to protect the area's historic buildings and sensitive cultural and archeological resources to the extent possible, to enhance visitor experience to the area, and to integrate creek restoration with other urban land uses.

Mr. Kamman provided H&H technical input and consultation to the design team to develop a restoration project consisting of a creek-brackish marsh-salt marsh interface and associated upland habitats. His work included evaluating surface water, groundwater and tidal sources. In addition, the development of a hydrodynamic model has informed and guided a preferred project design, including evaluation of storm surge, road crossing and Tsunami impacts to the project. A technical challenge addressed with the use of the model included predicting and quantifying salt/brackish marsh habitat zones within the restored wetland in response to periodically but prolonged closed-inlet conditions to Crissy Marsh - a water body that serves as the downstream connection to the proposed project.

Another unique challenge to this project includes integrating restoration planning and design efforts with the replacement and retrofit of Doyle Drive, the main on/off-ramp for the Golden Gate Bridge, being replaced along the entire northern boundary of the Presidio. Mr. Kamman is providing long-term technical review of this project to the Trust with respect to impacts to water resources and associated existing ecological habitats. The Quartermaster project also falls within the managerial jurisdiction of both the Presidio Trust and NPS-GGNRA, requiring work in close cooperation with both Presidio Trust and National Park Service (NPS) staff.

Salt River Ecosystem Restoration Project, Humboldt County, CA
Humboldt County RCD, 2005-2019

Mr. Kamman provided hydrology, engineering and environmental compliance services towards the planning and design of river and tidal wetland restoration on the Salt River (Eel River Delta plain) near Ferndale, California, in Humboldt County. The purpose of the Salt River Ecosystem Restoration Project (SRERP) is to restore historic processes and functions to the Salt River watershed. These processes and functions are necessary for re-establishing a functioning riverine, riparian, wetland and estuarine ecosystem as part of a land use, flood alleviation, and watershed management program. The Salt River Project has three components: 1) dredging the lower Salt River and lower Francis Creek from near the Wastewater Treatment Plant downstream for 2.5 miles; 2) restoring 247 acres of wetland estuary habitat in the lower Salt River within the 440-acre former

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dairy; and 3) reducing sediment inputs from tributary watersheds. The Salt River Project was designed using an "ecosystem approach" to address hydrology, sedimentation, and fish and wildlife habitat.

As part of project feasibility assessment, Mr. Kamman completed a hydrologic and water quality monitoring program, and developed a MIKE11 hydrodynamic model of the lower Salt River and Eel River estuary in Humboldt County, for the Humboldt County RCD. The purpose of this work was to complete a hydrologic, geomorphic, and hydraulic modeling assessments of the character and dominant physical processes controlling flow of water and sediment through the lower Salt River. Land use changes in the area have caused significant aggradation and infilling of the Salt River, significantly reducing tidal exchange, fish passage, and exacerbating flooding in upland areas. A primary goal of this study is to evaluate the feasibility of proposed restoration elements intended to increase tidal prism and exchange and in-channel sediment scour and transport. The desired outcome is a sustained increase in river conveyance capacity to improve drainage of surrounding flood-prone lands and improve aquatic, wetland, and riparian habitat.

As part of project development and feasibility assessment, Mr. Kamman completed a hydrologic and water quality monitoring program and MIKE11 hydrodynamic model development of the lower Salt River and Eel River estuary in Humboldt County for the Humboldt County RCD. The purpose of this work is to complete a hydrologic, geomorphic, and hydraulic modeling assessments of the character and dominant physical processes controlling flow of water and sediment through the lower Salt River. Land use changes in the area have caused significant aggradation and infilling of the Salt River, significantly reducing tidal exchange, fish passage, and exacerbating flooding in upland areas. A primary goal of this study is to evaluate the feasibility of proposed restoration elements intended to increase tidal prism and exchange and in-channel sediment scour and transport. The desired outcome is a sustained increase in river conveyance capacity to improve drainage of surrounding flood-prone lands and improve aquatic, wetland and riparian habitat.

Western Stege Marsh Restoration Project, Contra Costa County, CA
Tetra Tech, 2008-2010

Mr. Kamman provided technical hydrology and wetland hydraulics support to post-project monitoring of the Western Stege Marsh Restoration Project. His involvement began by providing an independent technical review of previous year's hydrologic monitoring results to evaluate the proposed monitoring success criteria and the rationale used to develop these criteria. This work entailed reviewing historic monitoring data and available natural slough channel geometry data-sets for San Francisco Bay area marshes. Mr. Kamman's study approach was to independently develop desired and sustainable channel geometry relationships for natural, healthy San Francisco Bay salt-marshes and compare them to the published success criteria. Greg was also retained to implement the Year 4 post-project hydrologic monitoring, with modifications to aid in better linking hydrologic processes to ecological conditions and function within the restored marsh. This work consisted of completing more targeted water level monitoring and channel geometry surveys in reference marsh areas containing desired physical and ecological attributes. These data were used to develop geomorphic success criteria (target channel geometry) more tailored to the project marsh and augment the criteria provided in available literature. Working closely with the project team of scientists, Mr. Kamman compared these hydrologic monitoring results to available vegetation surveys to better assess the overall success and evolutionary trend of the marsh.

Giacomini Wetland Restoration Project, Marin County, CA
The National Park Service and Point Reyes National Seashore Association, 2003-2012

Mr. Kamman managed a multi-year project for the NPS in the design and feasibility analysis of a tidal wetland, riparian, and freshwater marsh complex, on the 500-acre Giacomini Dairy Ranch, at the south end of Tomales Bay. The project began in 2003 and included hydraulic, hydrologic, and geomorphic assessments to characterize existing physical conditions, developing restoration alternatives, and completing hydrologic feasibility analyses. Restoration alternatives evaluated creation of a mosaic of subtidal through upland wetland and riparian habitat zones, as well as improvements to salmonid passage, red-legged frog habitat, tidewater goby habitat, and clapper-rail habitat. Emphasis was placed on completing detailed studies to quantify project-induced changes in flood frequency, magnitude and duration, impacts on water quality to local groundwater supply wells, and changes in sediment and water quality conditions in Tomales Bay.

Beginning in 2006, Mr. Kamman managed and assisted design engineers, preparing plans, specification, and cost estimates for a three phased construction schedule, that was completed in the summer of 2008. This project illustrates Mr. Kamman's ability to complete a broad variety of hydrologic feasibility analyses, including flood frequency analyses for contributing watersheds, reproducing historic flood events through numerical modeling, flow duration analysis and evaluation of environmental flow regimes, development of a water budget for created freshwater marsh and frog breeding ponds, sediment yield estimates, completing field monitoring (flow, water level, groundwater level, sediment, and water quality monitoring) to characterize existing site hydrologic and geomorphic conditions (fluvial and tidal), wind-wave setup and run-up for levee stability determination and construction design, coordinating and performing topographic and hydrographic surveys, performing hydrodynamic and water quality modeling of existing and alternative conditions, developing detailed construction cost estimates preparation of technical reports and design drawings and specifications in support of NEPA/CEQA environmental compliance, and public meeting presentation and participation. In addition, Mr. Kamman managed staff in the generation of DEM and TIN models of the existing site and all action alternatives. All work was completed on budget and in a timely fashion, despite repeated expansions to the project boundary and last minute changes driven by endangered species issues.

Critical Dune Habitat Restoration to Protect Threatened and Endangered Species, Marin County, CA
The National Park Service, 2009-2010

Mr. Kamman provided and managed engineering, design, and implementation planning support for the restoration of 300 acres of critical dune habitat at Abbots Lagoon within the NPS Point Reyes National Seashore. He developed engineered drawings, technical specifications and engineer's cost estimates, and assisted NPS in defining a range of methodologies suitable to local conditions and sensitive flora and fauna. This area of the park supports the best remaining intact dune habitat, including some of the largest remaining expanses of two rare native plant communities: American dune grass (Leymus mollis) foredunes, and beach pea (Lathyrus littoralis). European beach grass and iceplant were removed from

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the project site using mechanical removal and hand removal techniques. The project goal was to remove these invasive species from approximately 135 acres of prime dune habitat in the 300-acre project site, while not impacting sensitive species and habitats. The intended result was to remobilize this historic dune field and restore their natural form and migratory processes.

This project illustrates Mr. Kamman's ability to work closely with NPS staff to balance habitat protection and restoration across the landscape. As part of project design, he developed grading plans, and specified work flow, equipment movement and access routes which minimize impacts to special status species. Extensive fencing and exclusions zone planning was required to protect existing native habitats, and minimize tracking of plant stock to or through restored sties. In addition work elements had to be structured and prioritized to maximize ground work subject to budgetary constraints and work flow uncertainties. All work has been completed on budget and in a timely fashion, even with repeated expansions to the project boundary and affected area and last minute changes driven by endangered species issues.

Lower Gualala River and Estuary Assessment and Management Plan, Mendocino County, CA

California State Coastal Conservancy and Gualala River Watershed Council, and Sotoyome RCD, 2002-2005

Mr. Kamman worked with fisheries biologists to evaluate the hydrologic and water quality conditions in the lower Gualala River and estuary and identify and evaluate potential impacts to summer rearing habitat for salmonids and other aquatic organisms. This work included: assessing how the impacts of upstream land use (logging and water diversions) have altered water delivery and water quality to the Lower River and estuary over time; characterizing the physical coastal and riverine processes controlling opening and closure of the estuary inlet and lagoon morphology; monitoring and characterizing real-time and seasonal changes in lagoon water level and water quality; and evaluating the sediment transport capacity and geomorphic condition of the lower river and estuary. Mr. Kamman took the lead in developing and editing a management plan for the lagoon, prescribing actions to preserve, protect and enhance ecological habitats (with emphasis on salmonids) within the lagoon and lower Gualala River.

This project was completed on-time and on-budget and demonstrates Mr. Kamman's ability to integrate physical, water quality and biological data and information into a coherent and understandable description of the interrelated processes controlling the aquatic ecology of a lagoon system. A big challenge on this project was completing a high-quality and defensible field monitoring program on a "shoe-string" budget. The outcome of this study provides important understanding on how and why steelhead are surviving in a heavily logged (95% private ownership) watershed. The management plan prescribes recommendations to preserve and protect the lagoon as primary rearing habitat for steelhead.

Suisun Bay Tidal Wetland Restoration Design, Contra Costa County, CA

East Bay Regional Park District and LSA Associates, 1999-2005

Mr. Kamman provided hydrologic design services to the restoration of a 55-acre tidal wetland on Suisun Bay. The design will maximize habitat for special status fish species, and (to the extent possible) habitat for other special status animal and plant species. Working with a multi-disciplinary design team, Mr. Kamman assisted in developing a design based on analysis of habitat needs, tidal hydrodynamic and geomorphic processes, sedimentation rates and soil characteristics. Project tasks included: a site analysis defining existing ecological and hydrologic conditions; a hydrologic and biological restoration opportunities and constraints analysis to define restoration and management objectives; and hydrodynamic and sedimentation modeling to evaluate design alternatives. The final restoration and management plan included a grading plan, landscape revegetation plan and monitoring and maintenance plans. This work again illustrates his capabilities in the characterization of physical site conditions, development and feasibility analysis of project alternatives, and preparation of preliminary designs of sufficient detail to allow for environmental compliance through the CEQA/NEPA process.

Santa Clara River Estuary and Lower River Assessment, Ventura County, CA

Nautilus Environmental on behalf of the City of Ventura, Public Works Department, 2003-2004

Mr. Kamman directed a hydrologic and geomorphic assessment of the lower Santa Clara River and estuary. This work was completed for prime contractor in an effort to assist with re-permitting of treated effluent discharges to the estuary. The proposed study entailed characterizing existing and historic hydrologic and physiographic conditions and an assessment of historic changes in inflow to the estuary. This task included a comprehensive review and evaluation of available hydrologic reports and flow data within the watershed to characterize changes in flow associated with development of numerous water projects within the Santa Clara River basin. The main deliverable from this analysis was the development of a historic unimpaired flow record to the estuary based on regional regression analyses and water operations modeling. Within the estuary, Mr. Kamman designed and conducted a multi-year monitoring program of water levels, water quality (temperature, dissolved oxygen, salinity, and pH), and sand-spit morphology in order to evaluate inlet opening/closure frequency and associated changes in aquatic habitat (esp. tidewater goby) and other ecologic communities. A considerable portion of this subtask included detailed coastal process analysis (including wave power analyses and littoral sand transport), which, considered with the inflow analysis, provides a basis to evaluate the seasonal cycle of barrier beach buildup and destruction.

This project illustrates Mr. Kamman's ability to complete a broad variety of hydrologic and coastal process analyses under strict regulatory oversight. A premier study completed on this project was the development of a detailed water and salinity budget model for the estuary to evaluate the impacts of a wide variety of proposed and modified estuary inflow regimes to determine potential future water level and salinity conditions in the lagoon and impact on frequency of inlet breaching. In addition to coordinating and implementing a variety field monitoring and surveys, Mr. Kamman also provided real-time information and input to informational and negotiation meetings with state resource and regulatory agencies.

Eden Landing Ecological Reserve Restoration, Alameda County, CA

East Bay Regional Park District, 2000-2003

Mr. Kamman developed and completed hydraulic and hydrodynamic modeling assessments for the design of an approximately 1000-acre tidal marsh restoration in former Cargil salt manufacturing ponds, located a mile inland of San Francisco Bay. The restoration goals required balancing the desires to restore tidal marsh conditions to the site, while maintaining and enhancing the open water and salt

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panne habitats preferred by resident and migratory shorebirds. The restoration plan also needed to incorporate restoration objectives with remediation of high soil salinities resulting from past salt production, subsided ground elevations, dredging of new channels to the bay, existing infrastructure constraints, public access for the San Francisco Bay Trail, and preservation of several important cultural and historical sites. Hydraulic design objectives include maximizing both interior circulation and tidal exchange between the restoration parcel and the bay. A series of one-dimensional unsteady hydrodynamic models (MIKE11) were used to design the channel network, identify high velocity areas requiring erosion protection, and characterize expected habitat conditions. An important component of this design and feasibility assessment was to translate desired ecological habitat conditions identified in the EIR into specific hydrologic design criteria, considering channel velocities, scour, sediment transport, tidal water inundation frequencies and seasonality of ponding. Mr. Kamman worked closely with EBRPD civil engineers, assisting with the translation of hydraulic design criteria into final engineered drawings and specifications.

Wetland & Pond Projects

Design of California Red-Legged Frog Breeding Ponds, San Francisco Bay Area (various), CA

The National Park Service and Golden Gate National Parks Conservancy, 1997-present

Mr. Kamman has lead or provided hydrologic and engineering design assistance to the sighting and design of nearly two dozen breeding ponds for California red-legged frog throughout the San Francisco Bay Area. Work has been completed in Marin, Sonoma, Solano, Contra Costa, Alameda, and Santa Clara Counties under the auspices of numerous federal, state, and local county/city agencies. A common study approach consists of an initial site reconnaissance of watershed conditions and identification of potential sites. The reconnaissance is followed by a surface water hydrologic sufficiency analysis using available meteorologic and stream flow information. An important variable sought during pond sighting is the presence of migration corridors between known breeding areas and/or perennial water sources. Based on in-depth research and post-project monitoring, Mr. Kamman has refined or developed site-specific evapotranspiration estimates, which commonly do not match standard applied values. Accurate evapotranspiration rates are necessary if ponds are intended to periodically dry-down as a means to preclude undesired species such as bullfrog or mosquito fish. In many instances, a seasonal groundwater-monitoring program is implemented in order to better investigate and quantify potential and seasonal groundwater contributions. Other design challenges we commonly experience include: design of impermeable liners for ponds located in upland areas or highly permeable soils; hydraulic analyses and design of outfalls/spillways; sedimentation management/maintenance approaches; and requirements of inoculum and water used to line and fill the pond, respectively.

Hydrologic Feasibility Assessment for Mana Plain Wetland Restoration Project, Kauai, HI

State of Hawaii Department of Land and Natural Resources, 2010-2019

Working on behalf of the Mana Plain Wetland Restoration Partnership, Mr. Kamman completed a hydrologic feasibility assessment for the Mana Plain Wetland Restoration Project proposed by the State of Hawaii Department of Land and Natural Resources (DLNR), Division of Forestry and Wildlife (DOFAW) on the island of Kauai. The Mana Plain Wetland Restoration Project site is approximately 105 acres of low-lying abandoned sugarcane fields immediately north of the Kawaiele Waterbird Sanctuary and east of the Pacific Missile Range Facility. The purpose of the Mana Plain Wetland Restoration Project is to maximize the area of constructed wetlands within the restoration site. Palustrine emergent wetlands within the project will create habitat for four species of endangered Hawaiian waterbirds and other sensitive species, including: Hawaiian stilts; Hawaiian ducks; Hawaiian coots; Hawaiian moorhen; migratory waterfowl; and migratory shorebirds. The Mana Plain is of vital importance for the recovery of endangered waterbirds species. This restoration project will be designed to provide important breeding and feeding wetland habitats on an island where; 1) wetlands have been severely degraded, and 2) mongoose, an introduced predator, have not been established.

Mr. Kamman's work on this project included technical assessments and development of proposed restoration alternatives. Analyses completed included: a synthesis of the physical site setting (topography, geology, hydrogeology and soil); reviewing available data to characterize site meteorology, surface water drainage, water quality, and groundwater conditions; preparing a detailed water budget to describe the characteristics and processes of surface water and groundwater movement into and through the project area; evaluating project feasibility, water supply alternatives and costs; and completing a flood hazard impact assessment to evaluate potential project benefits and impacts to local area flooding. Working with the project partners, Mr. Kamman developed a preferred project alternative and supported in preparation of the project Environmental Assessment document. Mr. Kamman's firm was also retained by the State of Hawaii to develop engineering designs of the project.

MacArthur Meadow Wetland Restoration, San Francisco County, CA

Presidio Trust, 2013-2016

Mr. Kamman has been working on over a dozen independent wetland and creek restoration planning and design efforts within the Presidio of San Francisco since 2001. Most recently (2016), he developed a wetland restoration grading plan for the MacArthur Meadow Wetland Restoration Project in the central portion of the Tennessee Hollow watershed. As part of the site assessment, Greg characterized and modeled surface and groundwater interactions and identified a unique opportunity to restore 4 acres of mixed meadow, natural wetlands and creek/riparian corridor. This was possible due to the discovery of shallow groundwater conditions beneath this historically disturbed landscape. Various design components were integrated into the grading plan in order to enhance groundwater recharge and storage in the Meadow, while retarding runoff and drainage out of the wetland, including: daylighting storm drain runoff into the Meadow; reconfiguring internal channel alignments to enhance channel habitat and groundwater recharge; creation of wetland depressions to retain and recharge surface water; and removal of fill material to decrease the depth to the water table. Notable challenges of this work include restoring heavily disturbed natural resources in an urban setting while integrating designs with archeology/cultural resources, education and remediation programs.

Dragonfly Creek Restoration Project, San Francisco County, CA

Presidio Trust, 2007-2011

Mr. Kamman designed and managed hydrologic monitoring and analysis studies in support of planning and design for riparian and wetland habitat restoration along approximately 500-linear feet of the Dragonfly Creek corridor near Fort Scott of the Presidio of San Francisco. Work has included completing subsurface

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investigations including the installation of shallow wells and a sharp-crested weir with recorder to gauge creek flows. Mr. Kamman assisted in the development and selection of a preferred project alternative, considering on-site cultural resource protection, education and resource management issues (including flood control). Mr. Kamman prepared permit applications. Major components of the project included removal of significant fill and building foundations and installation of a new creek road crossing that will maintain the historical alignment, function and architectural character of a culturally significant roadway. Mr. Kamman oversaw development of PS&E for this project, which will create mitigation wetlands for a highway earthquake retrofit project that passes through the Park.

This project illustrates Mr. Kamman's ability to complete a broad variety of hydrologic analyses, including: surface water and groundwater hydrologic monitoring to characterize and quantify existing hydrologic conditions; rainfall-runoff modeling; hydraulic modeling of flood and scour conditions (including road crossing); preservation of existing wetland habitat and vegetation communities; integration with other Presidio Trust programs; and contracting flexibility to assist in conceptual planning and environmental compliance without increasing project design costs.

Mori Point Sensitive Species Habitat Enhancement Project, San Mateo County, CA
Golden Gate National Recreation Area and Golden Gate National Parks Conservancy, 2005-2011

Mr. Kamman provided hydrologic analyses, sighting and engineering design (PS&E) for three California red-legged frog breading ponds within the 105-acre Mori Point area. These efforts were completed in association and collaboration with a larger Coastal Trail improvement and ecosystem restoration effort. Quarrying and off-road vehicle use have left this site heavily scarred. The focus of restoration work was to protect the endangered San Francisco garter snake and the threatened red-legged frog. Most of this work will be focused on invasive species removal and enhancing endangered species habitat. As part of species habitat improvement, Mr. Kamman worked with project ecologists to design the ponds to optimize breeding habitat for California red-legged frog.

Work started with an initial site reconnaissance and study of watershed conditions and identification of potential sites. The reconnaissance was followed by a surface water hydrologic sufficiency analysis using available meteorological and stream flow information and installation and monitoring of shallow piezometers to quantify the proximity and seasonal variability in depth to water table. An important variable sought during pond sighting was the presence of migration corridors between known breeding areas and/or perennial water sources. Based on in-depth research and post-project monitoring for other ponds they created in the San Francisco Bay area, Mr. Kamman refined site-specific evapotranspiration estimates. Accurate evapotranspiration rates are necessary if ponds are intended to periodically dry-down as a means to preclude undesired species such as bullfrog or mosquito fish.

Other design challenges experienced included: design of impermeable liners for ponds located in upland areas or highly permeable soils; hydraulic analysis and design of outfalls/spillways; sedimentation management/maintenance approaches; and requirements of inoculum and water used to line and fill the pond, respectively. Mr. Kamman has designed numerous ponds for the NPS and affiliates within the Bay Area, including Mori Point (constructed 2007), Banducci (constructed 2007) and Giacomini (Phase I and Phase II constructed in 2007 and 2008) project sites.

Hydrologic Assessment and Restoration Feasibility Study for Shadow Cliffs Regional Recreation Area, Alameda County, CA
East Bay Regional Park District, 2009-2010

Mr. Kamman developed and implemented an assessment to identify groundwater levels and supplemental water supplies that will sustain seasonal wetland restoration areas and riparian habitats under an altered future hydrologic regime. This work will inform a forthcoming Land Use Plan Amendment for park occupying a series of former gravel quarry pits. Work included: obtaining and synthesizing available surface water and groundwater data to characterize existing hydrologic and water supply conditions and seasonal variability; quantifying the likely changes in groundwater conditions and quarry pit lake levels in association with changes in regional water transmission and groundwater recharge operations; and identifying, developing and evaluating a suite of ecosystem restoration alternatives. Other important project objectives include: improving habitat for waterfowl and wildlife; broadening recreational use; enhancing visitor education and wildlife interpretation; improve park aesthetics. Mr. Kamman evaluated a preferred park and ecosystem enhancement alternative that involves diverting high winter flows from an adjacent arroyo. This project demonstrates Greg's ability to characterize hydrologic conditions and quantify the relationship between groundwater, surface water and wetland habitat conditions, both under existing conditions and in predicting future hydrologic and ecologic conditions under an altered hydrologic regime (i.e., lower groundwater table).

Laguna Salada Marsh and Horse Stable Pond Restoration Project, San Mateo County, CA
Tetra Tech, 2007-2009

Mr. Kamman provided technical hydrology and hydraulics support to the planning and conceptual restoration design of Laguna Salada marsh and Horse Stable Pond, located adjacent to Sharp Park Golf Course in the town of Pacifica, California. The primary objectives of the project are: to reduce flood impacts within the project vicinity; improve sustainable ecological habitat for the endangered San Francisco garter snake and the threatened California red-legged frog; better understand and characterize the hydrologic and water quality conditions/processes affecting flood and ecological habitat conditions within the project vicinity; provide an effective pumping operation plan to meet ecological objectives; and develop appropriate hydrologic analytical approaches and models to assist Tetra Tech and the San Francisco Recreation and Park Department in the planning and design for marsh, pond, and creek restoration. The project is also a unique opportunity to connect this resource with the California Coastal Trail, the Bay Area Ridge Trail, and the surrounding GGNRA lands.

Mr. Kamman's work included completing a comprehensive review of available hydrologic and site information and implementing selected field investigations to develop and calibrate an integrated hydrology-flood routing-pond water operations model that will quantify the volume and depth of water moving through the project system. The investigation will also further characterize shallow groundwater conditions and water quality with respect to effects on Laguna Salada and Horse Stable Pond. Analytical and numerical modeling tools are being used to better characterize existing hydrologic and water quality conditions and to assist in identifying project opportunities and constraints as well as evaluate potential restoration design components - all necessary to inform a sustainable

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and successful restoration design.

Tolay Lake Restoration Feasibility Assessment, Sonoma County, CA
Sonoma County Agricultural Preservation and Open Space District, 2003

Mr. Kamman completed a detailed hydrologic feasibility analysis to evaluate a suite of potential freshwater lake and wetland restoration alternatives. Sites were evaluated under existing watershed land-use practices and under existing and forecasted water demands (in the form of existing water rights/applications). Analysis consisted of developing a detailed water budget model to simulate alternative restored lake inundation areas and depths under median and dry year conditions, as well as a 50-year historic period (1947-1997) displaying highly variable rainfall and runoff supplies. Three lake restoration alternatives were evaluated based on existing topography and likely historic lake configurations. The restoration alternatives include lakes with storage volumes equivalent to 136-, 1100-, and 2550-acre feet.

Haypress Pond Decommissioning and Riparian and Channel Restoration, Marin County, CA
Golden Gate National Recreation Area (GGNRA), 2001-2002

This project restored 170 meters of historic creek and riparian habitat through removal of Haypress Pond dam in Tennessee Valley within GGNRA. The goals of the project were to alleviate long-term maintenance needs and eliminate non-native bullfrog habitat threatening native California red-legged frog habitat in adjacent watersheds.

Working with the Park biologist, Mr. Kamman developed designs to decommission the dam and restore natural riparian and meadow habitat. This work included: characterization of existing topographic conditions; design of a channel profile through the proposed restoration project reach; preparation of a grading plan for the restoration project; and hydrologic and hydraulic analyses to evaluate the performance of the creek channel and flood plain below the former dam during a variety of flows. Challenges of this work included integrating sediment reuse into plans and construction phasing.

Damon Slough Site Seasonal Wetland Design, Alameda County, CA
Port of Oakland, 1999-2001

Working on behalf of the Port of Oakland, Mr. Kamman completed extensive surface and groundwater monitoring and data analyses to develop a detailed water budget to assist in the evaluation and design of a 7.5 acre seasonal freshwater wetland. Primary project objectives included a design that would provide shorebird/waterfowl roosting habitat, minimize impacts to existing seasonal wetland areas, and lengthen the duration of ponding through the end of April to promote use by migratory birds. In addition to developing hydrologic design criteria, responsibilities included development of grading plans to accommodate a local extension of the Bay Trail and wetland outlet works.

Water Quality Projects

Chicken Ranch Beach Soil and Groundwater Quality Investigation and Restoration Planning, Marin County, CA
Tomales Bay Watershed Council, 2007-present

Mr. Kamman is leading scientific and engineering efforts for a wetland and riparian corridor restoration project on Third Valley Creek and Chicken Ranch Beach in Inverness, California. The main project goals are to create a self-sustaining riparian and wetland system (requiring minimal operation and maintenance) and eliminate public exposure to high levels of bacteria that exist in a site drainage ditch discharging to the beach. The design will likely include establishing a blend of habitats, including: riparian stream corridor, seasonal/perennial freshwater marsh, and tidal/saltwater marsh.

Current efforts have included the development and implementation of a soil and groundwater quality investigation to delineate the source of elevated bacteria levels. This work includes: the collection and testing of depth-discrete soil samples; groundwater well installation, sampling and testing; and surface water sampling and testing; analysis of laboratory results; and reporting, including recommendations for further/expanded investigations. Mr. Kamman coordinated this time-sensitive sampling and analysis (six hour hold times) with Brulje and Race Laboratories in Santa Rosa.

Lower Miller Creek Channel Maintenance and Material Reuse Sampling Analysis Plan, Marin County, CA
Las Gallinas Valley Sanitary District, 2015

Mr. Kamman was commissioned to formulate and implement a plan for sediment removal and improved flood flow conveyance in the Lower Miller Creek channel. Accumulation of course sediment in the project reach had reduced discharge efficiencies at District outfalls. Miller Creek supports a population of federally listed Steelhead and adjacent wetland/marsh areas potentially support other state and federally listed special status species. Working with District Staff, Greg developed a suite of potential project alternatives and identified a preferred approach. Mr. Kamman completed all CEQA compliance (IS/MND), permitting and oversaw development of engineered plans and specifications.

In order to evaluate if reuse of excavated material from 2,655 feet of creek corridor in upland areas was feasible, Mr. Kamman developed and implemented a Sampling Analysis Plan (SAP) pursuant to U.S. Army Corps Guidance for Dredging Projects within the San Francisco District. Sample collection, sample handling, and analysis were performed in accordance with the SAP. Results for analytes were compared to a variety of screening criteria to determine the material's suitability for reuse in aquatic environments. A full suite of chemical and physical analyses were performed on soil samples collected from 16 locations, including: metals, PAHs, PCBs, pesticides, TOC, specific conductance, pH, sulfides, percent moisture and grain-size. Mr. Kamman managed all aspects of this effort including reporting and presentations/negotiations at multi-agency meetings through the Corps Dredge Materials Management Office (DMMO).

Lower Pitkin Marsh Hydrologic and Water Quality Monitoring, Sonoma County, CA
Sonoma Land Trust, 2008-2010

Mr. Kamman was retained to develop and implement a hydrologic and water quality monitoring program at Lower Pitkin Marsh outside of Forestville, California. The Pitkin Marsh area is one of the most valuable complexes of mixed riparian woodland and thicket, freshwater marsh, wet meadow, oak woodland and grassland in Sonoma County. The complex interaction of surface water, ground water, and scattered seeps and springs on the site creates unusual hydrologic conditions that promote a rare assemblage of plant species which includes several endemics. The primary objective of the hydrologic monitoring program was to understand the annual and season sources of both surface and ground water supplying wetlands. Hydrologic and water quality monitoring was

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initiated during the winter wet season of 2008/09 and will be conducted for a 12-month period through the ensuing summer dry-down and into the following wet season. Understanding how groundwater levels, spring flow and creek flow rates recede from winter wet to summer dry conditions will provide an important understanding and quantification of the seasonal variability in water supplies feeding selected wetland types. General water quality parameters (temperature, pH, specific conductance, and ORP) are measured at all monitoring locations during each visit. Nutrients (N and P) are measured in selected surface water and groundwater samples collected during at least three monitoring events, including a winter high flow, spring high base flow and summer low baseflow.

Pescadero Lagoon Restoration and Enhancement, San Mateo County, CA
California State Coastal Conservancy, 2005-2006

Mr. Kamman was retained to support restoration and water quality enhancement planning efforts in Pescadero Lagoon. In 2005-2006, he completed a synthesis of available hydrologic and water quality information in responding to requests for development of a hydrodynamic and water quality model of the lagoon. This model was considered as a means to identify causes for repeated fish-kills in the lagoon that occurred during initial breaching of the inlet. Mr. Kamman assisted in preparing a synthesis and model development feasibility report from this effort.

Water Temperature Simulations for Trinity River Fish and Wildlife Restoration Project, Trinity County, CA
Trinity County Planning Department, 1994-2004

For over a decade, Mr. Kamman completed a number of hydrology and water quality investigations in support of alternative feasibility studies on the Trinity River Fish and Wildlife Restoration Project in direct support of the Trinity River Restoration EIR/EIS. Studies involve assessing the effects of proposed flow alternatives on water temperature within and downstream of Lewiston Reservoir. Mr. Kamman was responsible for data collection, processing, and flow/temperature modeling of Lewiston Reservoir as part of a coordinated evaluation including other Trinity River system models. Another study included evaluating how project operations could be implemented or modified to optimize Lewiston Lake release temperatures to meet downstream temperature criteria and compensate for increased warming of the river associated with side channel and feather edge restoration activities. Mr. Kamman continues to evaluate how more recent water projects (raising Shasta Dam, Sites Reservoir, and the Waterfix tunnels) consider and integrate with the Trinity Restoration Project.

Upper Eel River Unimpaired Flow and Water Temperature Assessments, Humboldt County, CA
CalTrout, 1997-1999

Mr. Kamman evaluated changes in the natural flow regime of the upper Eel River, and developed an Upper Eel River proposed release schedule to enhance downstream Chinook and Steelhead spawning and rearing habitat. This work was triggered by proposals set forth by PG&E as part of their Potter Valley Project FERC relicensing process. Work consisted of two main investigations. The first included reviewing results of a ten year PG&E study and development of multivariate regression and stream reach (SSTEMP) temperature models to assess the effects proposed flow alternatives would have on downstream temperatures. The second investigation consisted of characterizing unimpaired flow conditions and developing a daily unimpaired flow record for use in project operation models.

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EXHIBIT 2

Thomas N. Lippe, SBN 104640
LAW OFFICES OF THOMAS N. LIPPE, APC
201 Mission Street, 12th Floor
San Francisco, California 94105
Tel: (415) 777-5604
Fax: (415) 777-5606
E-mail: Lippelaw@sonic.net

William P. Parkin, SBN 139718
WITTWER PARKIN LLP
335 Spreckels Drive, Suite H
Aptos, CA 95003
Tel: (831) 429-4055
Fax: (831) 429-4057
E-mail: wparkin@wittwerparkin.com

Attorneys for Petitioner San Franciscans for Balanced and Livable Communities

IN THE SUPERIOR COURT OF THE STATE OF CALIFORNIA

IN AND FOR THE COUNTY OF ALAMEDA

SAN FRANCISCANS FOR BALANCED AND LIVABLE COMMUNITIES, an unincorporated association;

Petitioner,

vs.

THE REGENTS OF THE UNIVERSITY OF CALIFORNIA; UNIVERSITY OF CALIFORNIA; UNIVERSITY OF CALIFORNIA, SAN FRANCISCO; MICHAEL V. DRAKE, in his capacity as President of the University of California; SAM HAWGOOD, in his capacity as Chancellor of the University of California, San Francisco; and DOES 1 through 30,

Respondents.

Case No. RG21089332

RELATED CASES:
CASE NO. RG21088939 and
CASE NO. RG21090517

PETITIONER'S REVISED OPENING BRIEF ON THE MERITS

[CEQA]

Trial Date: January 14, 2021
Time: 2:00 p.m.
Dept: 17
Judge: Honorable Frank Roesch

Action Filed: February 19, 2021

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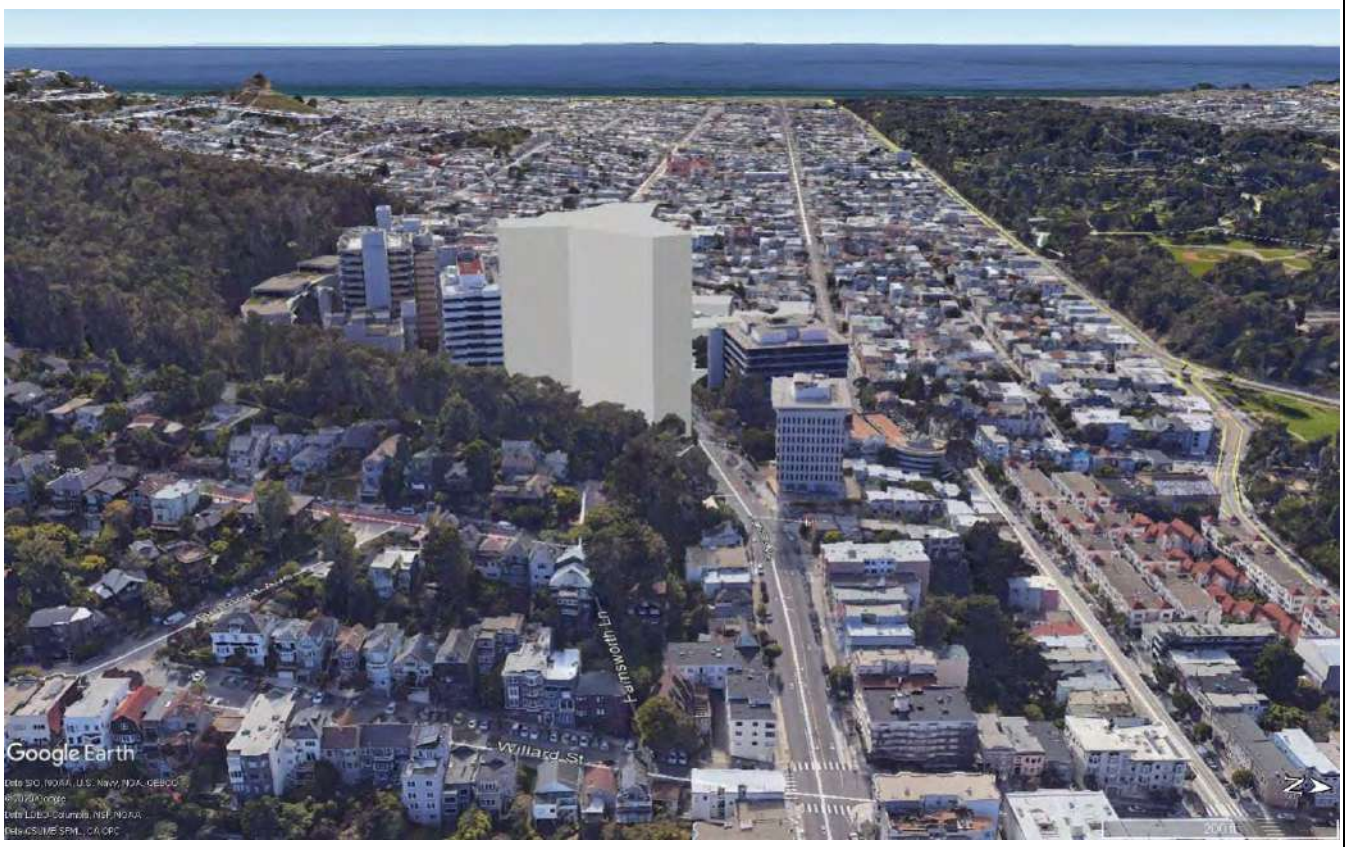

Sixteen-story, 995,000 Square-Foot New Hospital
Proposed in Parnassus Heights

(Administrative Record (AR) 3667, 5914.)

Introduction

UCSF's Parnassus Heights campus lies in a beautiful but constrained location within a residential community on the slopes of Mount Sutro. This action challenges the Comprehensive Parnassus Heights Plan ("CPHP" or "Project") approved by the respondent University of California. The CPHP is wildly out of scale in Parnassus Heights. It envisions about six million square feet of construction, including a hospital of almost a million square feet. Decades ago, UC committed not to expand the campus in such impactful manner. Instead, it repeatedly leveraged its space cap promise to justify locating medical facilities that it now it operates successfully in other parts of the City — including at Mission Bay.

The CPHP EIR fails to analyze or mitigate many significant Project impacts and refused to study alternate sites for a new hospital at any other of UC's City properties. Petitioners thus seek enforcement of mandates of the California Environmental Quality Act via this Court's judgment and writ.[1]

Statement of Facts

UCSF's Parnassus Heights Campus in San Francisco includes 107 acres in the Inner Sunset. The sixty-acre Mount Sutro Open Space Reserve lies within the central and southern portion of the campus.

In response to neighborhood concerns, in 1976 UCSF permanently committed to limit buildings on the Parnassus campus to 3.55 million gross square feet (the "space ceiling"). (AR 43029-31; 43046-47.) UC reaffirmed this commitment in 2014 in the UCSF Long Range Development Plan ("2014 LRDP"). (AR 13483.) UC's space ceiling resolution designated the Mount Sutro Open Space Reserve as permanent open space and altered campus boundaries to permanently exclude certain properties and prohibit further expansion within a defined surrounding area. (AR 43029-31; 43046-47.)

The 2014 LRDP established strategies to reduce a space ceiling "overage" that existed at that time by "1) converting some existing office space (UC Hall and Millberry Union towers) to residential use; 2) demolishing a number of buildings and either moving occupants and programs to other campus sites or absorbing them into other buildings at Parnassus Heights; and 3) excluding all residential space from the space ceiling calculation." (AR 13523.) The 2014 LRDP also limited new construction "to the need to comply with state seismic legislation and to better meet campus housing goals" (AR 13519) and to build a "New Hospital Addition." (AR 13523.)

The CPHP would gut and exceed the 3.55 million gross square foot permanent space ceiling by 1.44 million gross square feet. Housing was excluded from the calculation, and so the resulting development would be approximately six million gross square feet, exceeding the promised space

[1] CEQA is codified at Public Resources Code sections 21000, *et seq*. All statutory citations *post* are to the Public Resources Code unless otherwise noted.

ceiling by nearly 100%. (AR 3684.) The CPHP proposes several projects to be completed by 2030, the largest being a sixteen-story, 294 foot-tall New Hospital and a new research and academic building. Other phases would be constructed through 2050. The CPHP calls for 2.9 million gross square feet of new buildings at the campus and amends the 2014 LRDP. (AR 3684 [Table3-2].)

The 2014 LRDP required retaining, and in some cases re-purposing, several historic campus buildings, including UC Hall and Milberry Union. (AR 13523.) The CPHP reverses course. It proposes to demolish buildings that are historically significant and eligible for or already listed in the California Register of Historical Resources. Their loss would cause significant environmental impact. These buildings include UC Hall, Millberry Union, School of Dentistry, Langley Porter Psychiatric Institute, Aldea San Miguel Housing Buildings 8, 10, and 12, and Saunders Court. (AR 238-43; 1738-49; 1755-56; 3890-3906; 3912-13; 6621-22.)

Standard of Review

"The foremost principle under CEQA is that the Legislature intended the act 'to be interpreted in such manner as to afford the fullest possible protection to the environment within the reasonable scope of the statutory language.'" (*Sierra Club v. County of Fresno* (2018) 6 Cal.5th 502, 511 [Citations] (*County of Fresno*).) An EIR must reflect a good faith effort at full disclosure, with "detail sufficient to enable those who did not participate in its preparation to understand and to consider meaningfully the issues raised by the proposed project." (*Laurel Heights Improvement Association v. Regents of University of California* (1988) 47 Cal.3d 376, 405 (*Laurel Heights I*); Cal. Code Regs., tit.14 ("Guidelines"), § 15151.)

In reviewing an EIR, courts determine whether the agency prejudicially abused its discretion by: (1) failing to proceed in the manner required by law, or (2) reaching a decision or determination that is not supported by substantial evidence. (*Laurel Heights I*, *supra*, 47 Cal.3d at 392.) "A reviewing court must adjust its scrutiny to the nature of the alleged defect, depending on whether the claim is predominantly one of improper procedure or a dispute over the facts." (*Vineyard Area Citizens for Responsible Growth v. City of Rancho Cordova* (2007) 40 Cal.4th 412, 435 (*Vineyard*).)

If an EIR fails to address an issue or omits essential information, courts employ de novo review to determine whether the agency violated the statute's disclosure requirements. (*Banning Ranch Conservancy v. City of Newport Beach* (2017) 2 Cal.5th 918, 935 (*Banning Ranch*).) Similarly, the sufficiency of an EIR's discussion of environmental impacts is reviewed de novo. (*County of Fresno*, *supra*, 6 Cal.5th at 514 ["whether a description of an environmental impact is insufficient because it lacks analysis or omits the magnitude of the impact is not a substantial evidence question."].) An EIR must analyze every issue for which the record contains substantial evidence supporting a "fair

argument" of significant impact. (*Visalia Retail, LP v. City of Visalia* (2018) 20 Cal.App.5th 1, 13 (*Visalia Retail*); *Protect the Historic Amador Waterways v. Amador Water Agency* (2004) 116 Cal.App.4th 1099, 1109 (*Amador Waterways*).)

Courts use the "substantial evidence" test to review an agency's factual conclusions. (*Vineyard, supra,* 40 Cal.4th at 435.) But "the existence of substantial evidence supporting the agency's ultimate decision . . . *is not relevant* when one is assessing a violation of [CEQA's] information disclosure provisions." (*Communities v. Richmond, supra,* 184 Cal.App.4th at 82 (italics added).) While substantial evidence review defers to an agency's role as fact-finder, such deference does not abdicate vigorous judicial review. (*Laurel Heights I, supra,* 47 Cal.3d at 409, fn. 12 ["We do not suggest that a court must uncritically rely on every study or analysis presented by a project proponent in support of its position. A clearly inadequate or unsupported study is entitled to no judicial deference."].)

Argument

A. The EIR's Analyses of Growth Inducement and Population and Housing Impacts are Inadequate[2]

1. Facts Regarding Growth Inducing and Population/Housing Impacts

The campus population of students, faculty, staff, patients, and visitors is currently almost 18,000 and would increase due to the Project by almost 8,000 people by 2050, for a total campus population of over 25,000. (AR 4143; 4262; 1979.) The EIR explains that CPHP-induced population growth by 2050 in San Francisco would be about 7,300 and in the surrounding four counties about 5,500 persons. (AR 4262; 1979.) The EIR does not disclose campus-related employment, but indicates the Project would add over 4500 staff and faculty positions and 3400 related jobs by 2050; a total creation of about 8,100 new jobs. (AR 4143; 4264.)

The CPHP as proposed and evaluated in the EIR would develop 762 units of on-campus housing for students, faculty, and staff by 2050. (AR 13; 3670; 3675-76; 4262; 4145). At the eleventh hour before approving the CPHP, UC decided to build another 1,263 off-campus housing units. (AR 13; 262.) These off-campus units are not included in the EIR's project description, analysis of growth inducing impacts, analysis of population and housing impacts, or Mitigation Monitoring and Reporting Program ("MMRP"). (AR 3643-86; 4262-65; 4142-49; 6577-6607).

2. Introduction to Growth Inducement and Population/Housing Impacts

The EIR commits several legal errors in its analysis of off-campus housing displacement effects. It uses thresholds of significance that exclude consideration of substantial evidence that such impacts

[2] The issues in this section are "exhausted" in comments at AR 5822; 5878-84; 5894-5901; 758-59; SAR 63067-68. "SAR" refers to the proposed Supplemental Administrative Record attached to Petitioner's Motion to Augment Administrative Record.

may be significant. (*Visalia Retail, supra,* 20 Cal.App.5th at 13 [EIRs must analyze every issue for which the record provides a "fair argument" of significant impact]; *Amador Waterways, supra,* 116 Cal.App.4th at 1108-1109 ["thresholds cannot be used to determine automatically whether a given effect will or will not be significant"].)

As the Project would create many more jobs than houses, it would contribute to the severe existing "jobs/housing imbalance" in San Francisco and the Bay Area. When the people employed in an area greatly exceed available affordable housing, economic and social consequences lead to adverse impacts on the physical environment — within the purview of CEQA. Housing costs increase, driven by high demand and low supply, resulting in population displacement by "gentrification," as people with lower income are forced to seek lower housing costs elsewhere. The EIR omits analysis of such impacts, erroneously dismissing them as "social and economic."

CEQA recognizes a "significant effect on the environment" where "effects of a project will cause substantial adverse effects on human beings, either directly or indirectly." (§ 21083 (b)(3).) The San Francisco Department of Public Health has published guidance for assessing the effects of housing displacement caused by development projects, finding that physical effects include stress, unsafe housing, crowding, homelessness, unmet transport needs, and increased service needs. (AR 6867, 6869-70 ["Inadequate or unaffordable housing forces San Francisco residents into crowded or substandard conditions; requires them to compromise access to jobs and services, and quality education; and requires them to work multiple jobs to make ends meet"].)

CEQA requires that an EIR include a detailed statement of the growth-inducing impact of a proposed project. (§ 21100 (b)(5); Guidelines, § 15126.2 (e) [an EIR must "[d]iscuss the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment"].) A project has significant impacts if it would "induce substantial population growth in an area, either directly . . . or indirectly . . . ," or if it would "[d]isplace substantial numbers of people, necessitating the construction of replacement housing elsewhere." (Guidelines, Appendix G, §§ XIV(a), (b)).) The interplay between a project's economic and social effects is explained in the Guidelines at section 15064 subdivision (e):

> Economic or social changes may be used to determine that a physical change shall be regarded as a significant effect on the environment. Where a physical change is caused by economic or social effects of a project, the physical change may be regarded as a significant effect in the same manner as any other physical change resulting from the project. . . . If the physical change causes adverse economic or social effects on people, those adverse effects may be used as a factor in determining whether the physical change is significant. For example, if a project would cause overcrowding of a public facility and the overcrowding causes an adverse effect on people, the overcrowding would be regarded as a significant effect.

(*Citizen's Association for Sensible Development v. County of Inyo* (1985) 172 Cal.App.3d 151, 170-71 (*County of Inyo*) ["the lead agency shall consider the secondary or indirect environmental consequences of economic and social changes"].)

3. The EIR Omits Analysis of the CPHP's Off-Campus Housing Displacement Effects

The EIR analyzes "growth inducing" and "population and housing" impacts in separate chapters (AR 4262 [Ch 5.4]; 4137 [Ch 4.12]) but acknowledges that they are closely related. (AR 2097-99, 4262-64.) The EIR recognizes "the pressing need for affordable housing in San Francisco." (AR 3675-76.) The EIR concedes that "[c]ampus population growth under the proposed CPHP would not be entirely accommodated by the existing and new housing on site, and therefore would result in indirect housing demand beyond the campus site." (AR 4262.) Despite these facts, the EIR fails to analyze the off-campus housing displacement effects of CPHP-induced increases in student, faculty, and staff populations, new jobs, and housing demand.

For "population and housing" impacts, the EIR establishes three "significance criteria," querying whether the CPHP would:

> a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?
> b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?
> c) Exceed the LRDP EIR standard of significance by creating a demand for housing outside the market area where the facilities or site are located?

(AR 4142.) The EIR explains that criteria a) and c) are addressed in Impact POP-1 and criterion b) is addressed in Impact POP-2. (AR 4142.)

Impact POP-I relates to "unplanned population growth" and the creation of "demand for housing outside the market area." (AR 1979-83.) Impact POP-2 ostensibly relates to whether the CPHP would "displace substantial numbers of existing people or housing" that would "necessitate the construction of replacement housing elsewhere." (AR 1983, 4147.) The EIR admits that the project would draw thousands of new residents to the area; Impact POP-1 acknowledges "the housing demand associated with employment growth under the proposed CPHP." (AR 1982; 4146.) But while the EIR acknowledges that the CPHP-induced increase in population growth and associated demand for housing in the City's housing-short environment might indirectly displace residents and increase housing demand, its analyses of Impacts POP-1 and POP-2 do not analyze Project "housing displacement" effects in San Francisco or in the campus environs. The EIR discusses Impact POP-2 only as to temporary displacement of tenants in the Aldea housing complex on campus. (AR 1983-84, 4147.)

The EIR erroneously contends that gentrification is merely a social impact that need not be analyzed. (AR 5797-5800.) The EIR deploys thresholds of significance that artificially confine analysis to on-campus effects. It then fails to assess the indirect physical effects of gentrification/displacement as outlined by the Department of Public Health. (AR 5879, 5989; 6867-85.) The ignored effects include the CPHP-induced need for building new housing, which is a significant environmental impact. (*Ante*; Guidelines, Appendix G, § XIV (b).) The EIR's analysis of Impacts POP-1 and POP-2 and the FEIR's responses to comments as to those impacts are thus either irrelevant to the claimed legal error or not supported by substantial evidence.

Urban planner Terry Watt, ACIP [American Institute of Certified Planners], provided substantial evidence supporting a fair argument that the CPHP may cause a significant impact on housing demand in San Francisco; to wit: (1) the City is suffering a severe shortage of housing as well as a severe shortage of affordable housing; (2) for well over a decade, new jobs in the City far outstrip the rate of construction of new housing; and (3) the Project would exacerbate both of these existing conditions. (AR 5894-5901; 6711-13.) The EIR was thus required to analyze and mitigate the impact, and did not. (*Visalia Retail*, *supra,* 20 Cal.App.5th at 13.)

As Ms. Watt explained, the EIR fails to disclose that while Project-generated demand for housing would vastly outstrip construction of Project-related housing, San Francisco and the region have been grossly under-building while generating significant new jobs. In fact, the EIR provides no information about the current local and regional housing crisis, housing availability in the surrounding neighborhood and City, or affordability. The EIR fails to describe typical anticipated jobs and salaries of new faculty and staff, critical to estimating the percent that may qualify — along with students — as low income or very low income and likely require new low-cost housing. The EIR fails to acknowledge or offer mitigation for the fact that UCSF is a major contributor to the affordable housing crisis and would exacerbate that crisis by building out the CPHP without providing additional units affordable to new students, faculty, staff, and employees of supporting services. (AR 5894-5901.)

Since the record contains a fair argument that impacts may be significant, the EIR's omission of these analyses is prejudicial legal error. The standard for whether information omitted from an EIR is "essential" is similar to whether any procedural violation of CEQA is prejudicial. For the omission of essential information, "[t]he ultimate inquiry . . . is whether the EIR includes "enough detail 'to enable those who did not participate in its preparation to understand and to consider meaningfully the issues raised by the proposed project.'" (*County of Fresno*, *supra,* 6 Cal.5th at 516.) Similarly, "omission in an EIR's significant impacts analysis is deemed prejudicial if it deprived the public and decision makers of

substantial relevant information about . . . likely adverse impacts." (*Neighbors for Smart Rail v. Exposition Metro Line Construction Authority* (2013) 57 Cal.4th 439, 463.)[3]

In addition to failing to assess physical effects of displacement and gentrification, the EIR erred by limiting analysis to on-campus effects. CEQA requires that an EIR evaluate, and that public agencies mitigate or avoid, significant effects of projects in the "area which will be affected." (*City of San Diego v. Board of Trustees of California State University* (2015) 61 Cal.4th 945, 957 (*City of San Diego*); *City of Marina*, *supra*, 39 Cal.4th at 367 ["CEQA does not . . . limit a public agency's obligation to mitigate or avoid significant effects to effects occurring on the agency's own property"]; Guidelines, § 15360.)

This rule applies to UCSF with particularity because CEQA and the Education Code require that UC analyze and mitigate off-campus impacts. (§ 21080.09 (b); Ed. Code, § 67504 (b)(1) ["the expansion of campus *enrollment and facilities* may negatively affect the surrounding environment. Consistent with . . . CEQA, it is the intent of the Legislature that the University of California sufficiently mitigate significant off-campus impacts related to campus growth and development" (italics added)]; *Save Berkeley's Neighborhoods v. Regents of University of California* (2020) 51 Cal.App.5th 226, 231 ("[G]rowth includes student enrollment increases, which the Legislature has acknowledged 'may negatively affect the surrounding environment'" [citing Ed. Code, § 67504 (b)(1)]).) The EIR's narrow focus on the Project's growth-inducing potential and tenant relocation impacts *on campus* ignores the physical impacts of CPHP-induced growth that would occur in the surrounding area.

The FEIR's response to comments raising concerns about housing are non-responsive or reflect legal errors discussed in the next section. Master Response 14 simply restates what the DEIR said about growth-inducing and population/housing impacts. (AR 5792-96.) It provides no new analysis in response to the comments. For example, it states that the Draft EIR "finds that the new households would create a demand for housing that would not be entirely accommodated by the existing and new housing on the Parnassus Heights campus site; that the result would be housing demand (and associated population growth) beyond the campus site;" and that while San Francisco

> . . . is the primary area that would be affected directly by CPHP-related population and housing effects, effects would extend beyond San Francisco to neighboring counties in the Bay Area. The Draft EIR explains that it would be speculative to characterize the site-specific environmental effects resulting from the development of such off-site housing as the development would occur over a large five-county area and over a period of time (note that the CPHP covers a period of 30 years).

[3] See also *San Joaquin Raptor I*, *supra*, 27 Cal.App.4th at 721-722 ["error is prejudicial 'if the failure to include relevant information precludes informed decisionmaking and informed public participation, thereby thwarting the statutory goals of the EIR process,'"], quoting *Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692, 712 (*Kings County*)].

(AR 6796.) The response artfully evades the question presented by the comments regarding the nature and extent of impacts on the community and the environment of additional affordable housing demand in a city with a dire shortage.

Master Response 14 also contends that the comments "conflate the conclusions of the population and housing analysis . . . with the CPHP's growth inducing effects . . . to assert that the Draft EIR is seeking to diminish the significance of the effects of the project on housing" and that "the two analyses are distinctly different in the impacts that they address." (AR 5796.) This response is immaterial. The EIR is required to analyze and identify mitigation for the CPHP's housing displacement impact; it fails to do so as described above, and the response fails to explain how or why any purported differences between population/housing and growth-inducing impacts under CEQA are relevant.

Master Response 15 makes two legal arguments, *i.e.*, that gentrification need not be studied because it is *only* a social and economic effect *and* that analyzing the indirect effect on the physical environment of the gentrification caused by the CPHP would be "speculative." (AR 5797-5800.) Both arguments constitute legal error.

The response cites appellate decisions for the proposition that gentrification is a social and economic effect. (AR 5798-800.) It fails to explain that the cases recognize that where substantial evidence supports a fair argument that a project's social and economic effects may indirectly lead to significant impacts on the physical environment, they must be studied in an EIR. (*E.g.*, *Joshua Tree Downtown Business Alliance v. County of San Bernardino* (2016) 1 Cal.App.5th 677, 685 ["only if the loss of businesses affects the physical environment — for example, by causing or increasing urban decay — will CEQA be engaged"]; *Maintain Our Desert Environment v. Town of Apple Valley* (2004) 124 Cal.App.4th 430, 446 ["social, economic and business competition concerns are not relevant to CEQA analysis unless it is demonstrated that those concerns will have a significant effect on the physical environment"]; *Goleta Union School Dist. v. Regents of University of California* (1995) 37 Cal.App.4th 1025, 1030-31 ["An EIR may trace a chain of cause and effect from a proposed decision on a project through anticipated economic or social changes resulting from the project to physical changes caused in turn by the economic or social changes"].)

As noted above, Ms. Watt's expert opinion provides substantial evidence supporting a fair argument. (*E.g.*, AR 5900 ["Based on accurate information about the pre-Covid SF and Bay Area housing crisis (summarized above), it can reasonably be concluded that the addition of 5,200 students, faculty and staff by 2050 and only 984 units produced, the housing need generated constitutes a significant impact"].) The EIR cannot lawfully omit any analysis of the issue.

The EIR's conclusion that the analysis would be "speculative" is unsupported by fact. (*Santiago County Water Dist. v. County of Orange* (1981) 118 Cal.App.3d 818, 831 ["The EIR must contain facts and analysis, not just the bare conclusions of a public agency"].) Ms. Watt details many types of information the EIR could and should have developed to conduct the required analysis. (AR 5894-5901.) UC failed to "use its best efforts to find out and disclose all that it reasonably can." (Guidelines, § 15144.) In *Stanislaus Audubon Society, Inc. v. County of Stanislaus* (1995) 33 Cal.App.4th 144, for example, the Court found substantial evidence that a proposed country club could induce housing development. As a result, it was inappropriate for the County to postpone review of the likely environmental effects until such effects had manifested. (*Id*. at158-59; see also *Napa Citizens for Honest Government v. Napa County Board of Supervisors* (2001) 91 Cal.App.4th 342, 370-71 (*Napa Citizens*) [an agency may not defer analysis of housing effects simply because the nature and extent of such development is unknown]; *City of Antioch v. City Council* (1986) 187 Cal.App.3d 1325, 1338.)

In sum, the EIR fails to include mandatory analysis of whether CPHP-induced increases in population and demand for housing would indirectly cause significant impacts on the physical environment and people off-campus by displacing people from their homes and creating a need for construction of new housing.

4. The EIR Incorrectly Applies "Ratio Theory" and Improper Baseline to Growth Inducement and Population and Housing Impacts [4]

The EIR's conclusion that CPHP growth inducement and population/housing impacts would be less than significant is based on additional errors of law. The EIR states:

> Implementation of the proposed CPHP would induce population growth in the Bay Area, but the population growth would *not be substantial in comparison* to growth that is projected and planned for San Francisco and the four study area counties in Plan Bay Area 2040 and the local general plans for the study area communities. Further, the population growth would not result in a demand for new housing that would exceed the capacity of the five-county market area.

(AR 1981; 4145 (italics added).) The EIR's rationale that the CPHP's growth is "not substantial in comparison" to growth projected for San Francisco and the four-county study area invokes the discredited "ratio theory."

CEQA prohibits such "drop in the bucket" analysis. (*Cleveland National Forest Foundation v. San Diego Assn. of Governments* (2017) 3 Cal.5th 497, 515 (*Cleveland I*) ["SANDAG's conclusory statement that its role in achieving the Executive Order's 2050 emission reduction target is 'likely small' is not a valid reason for rejecting the target as a measure of significance"]; *San Francisco Baykeeper, Inc. v. State Lands Commission* (2015) 242 Cal.App.4th 202, 223 ["this approach 'avoids analyzing the

[4] These issues are "exhausted" in comments at AR 5880.

severity of the problem and allows the approval of projects which, when taken in isolation, appear insignificant, but when viewed together, appear startling.'"]; *Friends of Oroville v. City of Oroville* (2013) 219 Cal.App.4th 832, 841-42; *Communities for a Better Environment v. California Resources Agency* (2002) 103 Cal.App.4th 98, 114 (*CBE v. Resources*) ["the guiding criterion on the subject of cumulative impact is whether any additional effect caused by the proposed project should be considered significant given the existing cumulative effect"]; *Kings County*, *supra*, 221 Cal.App.3d at 718.)

Also, by comparing CPHP-induced growth to *planned* growth in the entire City and region, the EIR improperly compares the impact to what is allowed in planning documents rather than what exists in the environment. (*Communities for a Better Environment v. South Coast Air Quality Management Dist.* (2010) 48 Cal.4th 310, 321, n.6 (*South Coast*); *Environmental Planning and Information Council v. County of El Dorado* (1982) 131 Cal.App.3d 350, 358-59.)

5. The EIR Piecemeals Analysis of the New Housing Initiative[5]

Only days before approval of the CPHP, UC and the City and County of San Francisco agreed to a Memorandum of Understanding in which UC agreed to build 1,263 off-campus housing units. (AR 13; 262; 1302; 1314-15; 1355.) As noted above, this construction was *not* included in the EIR's project description, analysis of growth inducing or population and housing impacts, or the MMRP. But this new housing became part of the Project. Therefore, the EIR was required to study and mitigate its impacts.

CEQA's conception of the term "project" remains broad to maximize protection of the environment. (*Friends of the Sierra Railroad v. Tuolumne Park & Recreation Dist.* (2007) 147 Cal.App.4th 643, 653; *San Joaquin Raptor I*, *supra*, 27 Cal.App.4th at 730). "This big picture approach to the definition of a project (*i.e.*, including "the whole of an action") prevents a proponent or a public agency from avoiding CEQA requirements by dividing a project into smaller components which, when considered separately, may not have a significant environmental effect." (*Nelson v. County of Kern* (2010) 190 Cal.App.4th 252, 270-271.) Lead agencies must also evaluate the environmental impacts of reasonably foreseeable future activities associated with a CEQA project that may contribute to significant environmental effects. (*Laurel Heights I*, *supra*, 47 Cal.3d at 395-396.) This obligation attaches whether the new housing is considered part of the Project, a foreseeable future activity, or a separate project subject to cumulative effects analysis; one way or the other the EIR must conduct the analysis. (*San Joaquin Raptor I*, *supra*, 27 Cal.App.4th at 733.) Construction of off-campus housing is a reasonably foreseeable future activity associated with implementation of the CPHP.

Moreover, CEQA does not permit last minute changes to the project description. (*Washoe Meadows Community v. Dept. of Parks & Recreation* (2017) 17 Cal.App.5th 277 ["[F]or a project to be

[5] These issues are "exhausted" in comments at AR 750-753; SAR 3067-68.

stable, the DEIR, the FEIR, and the final approval must describe substantially the same project."]) "The defined project and not some different project must be the EIR's bona fide subject." (*Concerned Citizens of Costa Mesa v. 32nd Dist. Agricultural Assn*. (1986) 42 Cal.3d 929, 934.)[6] After adding 1,263 residential units, the DEIR, FEIR, and Findings do not describe the Project.

The EIR's omission of any analysis of whether CPHP-induced housing demand would cause significant environmental effects by displacing people from their homes and construction of new housing is a prejudicial legal error warranting issuance of a peremptory writ. Its absence precludes "those who did not participate in its preparation to understand and to consider meaningfully the issues raised by the proposed project.'" (*County of Fresno*, *supra*, 6 Cal.5th at 516).

B. The EIR Fails to Lawfully Assess Impacts on Beach Water Quality[7]

1. Introduction and Standard of Review for Beach Water Quality Claims

CEQA requires that an EIR evaluate, and that agencies mitigate or avoid, significant effects of projects in the "area which will be affected by a proposed project." (*City of San Diego*, *supra*, 61 Cal.4th at 957; Guidelines, § 15360.) The project description is the activity the EIR evaluates for environmental impact (*Nelson v. County of Kern* (2010) 190 Cal.App.4th 252, 271-272; § 21065), while the environmental setting (i.e., baseline) is the condition of the environment against which the EIR will evaluate project changes for environmental harm (*South Coast*, *supra*, 48 Cal.4th at 315). Therefore, CEQA requires that an EIR describe the environmental setting. (*Ibid*; *Friends of the Eel River v. Sonoma County Water Agency* (2003) 108 Cal.App.4th 859, 874 (*Eel River*); Guidelines, § 15125.) An EIR's description of the environmental setting must also describe relevant regulatory actions by other agencies that affect the setting. (*Eel River*, *supra*, 108 Cal.App.4th at 874 ["the EIR's description of the Project's environmental setting is deficient because it does not disclose . . . the fact that FERC is considering proposals to curtail these diversions in order to prevent harm to these species"].)

Here, the DEIR fails to describe either physical or regulatory components of the environmental setting as they relate to potential significant impacts on beach water quality. The DEIR then fails to assess Project impact on that water quality, which is severely degraded. The whole issue is ignored. (AR 1895-1911 [DEIR, Ch.4.9].) Extensive comments, including data showing current water quality conditions, explained how the Project's admitted increases in waste and storm water discharges would exacerbate this pollution. (AR 6052-65, 7461-8889.) Because substantial evidence supports a "fair argument" that the Project may cause a significant impact on beach water quality, the EIR was required

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[6] Whether an EIR correctly describes a project is a question of law, subject to de novo review. (*South of Market Community Action Network v. City & County of San Francisco* (2019) 33 Cal.App.5th 321, 332.)

[7] The issues in this section were "exhausted" at AR 6052-65; 856-862; 7461-8889.

to analyze the issue. (*Visalia Retail, supra.)* The claim that the EIR omitted essential information is reviewed de novo. (*County of Fresno*, 6 Cal.5th at 516.)

2. The DEIR's Analysis of Impacts on Water Quality

The DEIR discloses that the project would add about 2.0 million square feet of new space and generate about 0.18 mgd (million gallons per day) of new wastewater/sewage. (AR 2084.) The EIR assesses this impact solely in terms of whether it may require construction of new wastewater treatment capacity, which construction might cause secondary environmental impacts. (AR 2063-91.) The DEIR concludes that such new construction would not be needed because "[w]astewater flows from the Parnassus Heights campus site would be directed to the OSP [Oceanside Treatment Plant]" that "has about 26 mgd of excess dry weather treatment capacity, which is adequate to accommodate the increase in flow generated by the net new development envisioned under the proposed CPHP." (AR 2084.)

With respect to stormwater discharges, the DEIR discloses that the campus drains both west to the OSP and east to the Southeast Treatment Plant (SEP) and that San Francisco operates a combined sewer system (CSS) that combines stormwater with sewage for treatment at these plants. The EIR concludes that impacts on surface water quality would be less than significant because the Project-induced increase in the acreage of impervious surfaces is only 4% compared to the current acreage of impervious surfaces on campus, and because operation of the CSS, the OSP, and the SEP is regulated by the San Francisco Regional Water Quality Control Board (Water Board) through permits issued pursuant to the National Pollutant Discharge Elimination System (NPDES) established by the federal Clean Water Act and the state Porter-Cologne Water Quality Control Act. (AR 1905-06.) The DEIR reaches this conclusion without quantifying the increase in stormwater discharge associated with the increase in impervious surface, without mentioning beach water quality or its severely degraded condition, and without a single word devoted to how combined Project-induced increases in sewage and stormwater discharges might exacerbate these conditions.

In addition to the increase in impervious surfaces and unquantified stormwater runoff from the "campus core," the DEIR discloses additional increases in impervious surfaces outside the campus core. (AR 1906.) The DEIR concludes these increases would also not cause significant impacts because of the "same or similar regulatory requirements as those described" for the campus core and because improvements constructed outside the campus boundary would be subject to "construction site runoff requirements and post-construction stormwater controls in accordance with the City Public Works Code and in compliance with the City's Stormwater Management Ordinance." (AR 1906.)

This portion of the DEIR is singularly uninformative. As it did with the increases in runoff from the campus core area, the DEIR provides no clues regarding the degree of increased stormwater runoff

associated with the increase in impervious surfaces outside the core. Also, while the DEIR intimates that off-campus facilities would be subject to San Francisco's "post-construction stormwater controls," it provides no information on the extent to which these controls might reduce CPHP-caused increases in runoff. As it does with Project-generated increases in sewage, the DEIR also relies on "the relatively small change" in Project-generated increases in stormwater discharge to conclude the impact on "stormwater drainage capacity, or additional sources of polluted runoff would be less than significant." (AR 1908.) In sum, the DEIR fails to assess whether increases in sewage and stormwater discharges, which are combined in the city's CSS, may cause significant impacts on beach water quality.

a. The DEIR Fails to Describe San Francisco's Degraded Beach Water Quality

Comments documented the degraded condition of San Francisco's beach water quality. (AR 6055-57.) The San Francisco Public Utilities Commission (SFPUC) monitors shoreline bacteria (*i.e.*, total coliform, e. coli and enterococcus) at sixteen stations around the perimeter of San Francisco where water contact recreation occurs, including additional monitoring whenever a treated discharge from the City's combined sewer system affects a recreational beach. When monitoring shows that bacterial contamination exceeds state health standards, the affected beach is "posted" to discourage water contact recreation. This database shows that between January of 2016 and June of 2020, there were 131 days on which at least one ocean side beach was posted for exceeding state health standards for any of the three types of bacteria tested; 333 days on which at least one bay side beach was posted, and 464 days on which at least one beach was posted.[8] (AR 6056; 7461-75 [Figures 1 through 15 summarizing beach water quality monitoring data January 1, 2016, though June 30, 2020].)[9] These results are in Table 2.[10]

Table 2 [Summary of Figures 1-15]

January 1, 2016, through June 30, 2020	**# of days when at least one beach was posted for at least one exceedance of a state health standard [Blue Bars]**	**# of beach postings for exceedances of state health standards or due to combined sewer system (CSS) overflow [Yellow Bars]**	**# of exceedances of any state health standard at any beach [Red Bars]**
Ocean Side beaches	131	210	298
Bay Side beaches	333	546	936
Ocean and Bay beaches	464	756	1,234

[8] Ocean side beaches are: Baker, China, Ocean, and Fort Funston. Bay side beaches are: Crissy Field, Aquatic Park, Mission Creek, Candlestick Point State Recreation Area, and Islais Creek.

[9] Figures 1 through 15 present monthly totals of days on which San Francisco ocean side and bay side beaches exceeded state health standards for any of the three types of bacteria tested.

[10] For January 1, 2016, though June 30, 2020, these figures show monthly totals for ocean side beaches (Figures 1-5), bay side beaches (Figures 6-10), and ocean and bay side beaches (Figures 11-15.) The SFPUC's raw water quality monitoring data for this time period is at AR 8047-8172.

The DEIR fails to disclose this information. Remarkably, the DEIR also fails to disclose that the waters of San Francisco Bay are listed as impaired for bacterial contamination under section 303(d) of the Clean Water Act ("CWA"), or that in 2016, the State Water Resources Control Board adopted a Total Maximum Daily Load for bacterial contamination for the bay. (AR 6056-57; 7484-86 [Ex 2]; 7488-7502 [Ex 3].)[11] Thus, any discharge exceeding the City's bacterial load allocation violates the CWA. In short, the current environmental setting/baseline at San Francisco's ocean side and bay side beaches is one of severe water quality degradation and the DEIR ignores this elephant in the room.

b. The DEIR Fails to Describe the Dysfunctional Regulatory System Governing San Francisco's Sewage Treatment Plants

As noted above, the Water Board regulates San Francisco's operation of the OSP and SEP through NPDES permits.[12] These permits require the SFPUC to submit monthly and annual self-monitoring reports (SMRs) to the Water Board, by online upload to the California Integrative Water Quality System database (CIWQS). The SMRs include raw data regarding water quality and narrative cover letters. The cover letters describe instances of permit non-compliance. The CIWQS database also includes notices of violations issued by the Water Board.

All instances of NPDES permit non-compliance at the OSP and SEP recorded from January 2016, to June 2020, are presented at AR 8004-22 [Ex 10] and AR 8024-45 [Ex 11], respectively. There were 171 instances of non-compliance and 44 Notices of Violation.[13] All instances of permit non-compliance at the OSP and SEP for the years 2008 through 2014 are presented at AR 7994-8002 [Ex 9]. The OSP and SEP have consistently failed to comply with their NPDES permits, including permit terms limiting bacterial contamination in their effluent discharges to the ocean and bay. Indeed, in 2019 the U.S. Environmental Protection Agency sent two Notice of Violation letters to the City detailing many of the worst violations of federal and state water pollution control laws due to bacterial contamination. (AR 7984-86 [Ex 7]; 7988-91 [Ex 8].) The DEIR ignores all of this.

c. The DEIR's Omission of Essential Information and Analysis Regarding Beach Water Quality Impacts Is Prejudicial

The DEIR's handling of impacts on beach water quality precluded meaningful consideration of the issue. The DEIR fails to describe the most important components of the environmental and regulatory settings relating to beach water quality, including severely degraded water quality conditions

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[11] The Water Board's Order and Basin Plan Amendment to establish a Total Maximum Daily Load for bacteria at San Francisco bay beaches are AR 7484-86 [Ex 2] and 7488-7502 [Ex 3], respectively.

[12] The OSP is governed by NPDES Permit No. CA0037681, by way of Water Board Orders R2-2009-0062 (AR 7504-7663 [Ex 4]) and R2-2019-0028 (AR 7665-7814 [Ex 5]). The SEP is governed by is NPDES Permit No. CA0037664; Order No. R2-2013-0029. (AR 7816-7982 [Ex 6].)

[13] See AR 8177- 8501 [Ex 13], for the OSP, and AR 8503-8720 [Ex 14], for the SEP.

and the demonstrated inability of San Francisco's CSS to prevent these conditions. (*San Joaquin Raptor I, supra*, 27 Cal.App.4th at 722-30; *Eel River, supra,* 108 Cal.App.4th at 874.) Establishing the baseline environmental setting at the beginning of the CEQA process is a fundamental requirement so that project changes can be seen in context and significant effects accurately identified. (*Communities v. Richmond, supra,* 184 Cal.App.4th at 89.) Here, the DEIR ignores not only the baseline but the entire issue. Readers of the DEIR would have no idea that beach water quality is degraded, that regulatory efforts have failed to clean it up, or that the project may make it worse.

The DEIR also fails to describe the Project in enough detail to inform any analysis of water quality impacts, most egregiously with respect to increases in impervious surfaces outside the campus core. In addition, discussion of water quality impacts fails to account for stormwater and sewage being combined in the same pipes for conveyance to the OSP and SEP. Instead, the DEIR describes these waste streams in separate chapters, minimizing their combined impact. (AR 1895-1911; 2063-91.)

d. The DEIR's Reliance on the "Ratio Theory" and Another Agency's Regulatory Program are Errors of Law

The DEIR concludes that water quality impacts would be less than significant based on the relatively small increases in Project-generated sewage to be conveyed to the OSP and the relatively small increases in impervious surfaces that would increase stormwater runoff to the OSP and SEP. These are errors of law. As discussed *ante,* the "ratio" approach is a legal error.

The DEIR also bases its conclusion that water quality impacts would be less than significant on its unlawful reliance on other agencies' regulatory programs. As discussed, regardless of the DEIR's assertion that the OSP has sufficient *dry weather capacity* to meet current and projected demand, and regardless of the fact that San Francsico's CSS is regulated by NPDES permits enforced by the Water Board, the waters at San Francisco beaches frequently exceed state bacterial health standards. This error is especially prejudicial where, as here, the relied-upon regulatory program is failing to prevent severe beach water pollution. (*Ebbetts Pass Forest Watch v. California Dept. of Forestry and Fire Protection* (2008) 43 Cal.4th 936, 957 (*Ebbetts Pass*) [error to conclude that compliance with pesticide restrictions precludes significant impact]; *Californians for Alternatives to Toxics v. Department of Food & Agriculture* (2005) 136 Cal.App.4th 1, 16.)

3. The FEIR Fails to Cure the DEIR's Omission of Essential Information Regarding Beach Water Quality Impacts and the FEIR's Response to Comments Is Legally Inadequate

Lead agencies must meaningfully respond to significant environmental comments on a Draft EIR. (*Santa Clarita Organization for Planning the Environment v. County of Los Angeles* (2003) 106 Cal.App.4th 715, 723 ["It is not enough for the EIR simply to contain information submitted by the

public and experts. Problems raised by the public and responsible experts require a good faith reasoned analysis in response"]; *Environmental Protection Information Center v. Johnson* (1985) 170 Cal.App.3d 604, 628 ["Non-specific, general, or conclusory responses unsupported by empirical information, scientific authorities or explanatory information "fail to crystallize issues"]; *People v. County of Kern* (1974) 39 Cal.App.3d 830, 841 [Responses to comments must "set forth in detail the reasons why the particular comments and objections were rejected."].)

a. The FEIR's Responses Confirm the DEIR's Omission of Essential Information

Extensive comments on the DEIR, including data showing current beach water conditions, explained how the Project's admitted increases in waste and storm water discharges would exacerbate pollution. (AR 6052-65, 7461-8889.)[14] The DEIR failed to discuss beach water quality but generally found that Project-related water quality impacts would be less than significant. (AR 1904.) In response to comments, the FEIR and Findings reversed field and found that beach water quality impacts could be significant. (AR 4062; 222-226; 5783-5788 [Master Response 12].) The FEIR concedes that comments on the DEIR made "the valid point that existing water quality in the Bay and the Ocean is negatively affected by wet weather discharges, and that condition is part of the CEQA baseline for evaluation of impacts." (AR 5784.) The FEIR, does not however, remedy the DEIR's failure to describe "existing water quality in the Bay and the Ocean," nor how it is "negatively affected by wet weather discharges," nor provide this missing information as "part of the CEQA baseline for evaluation of impacts." The FEIR does not analyze the extent of use of the waters at San Francisco beaches for water contact recreation like swimming, kayaking, surfing, kite boarding, wind-surfing, and fishing, nor the extent to which degraded water quality and the SFPUC's beach water quality postings dissuade people from engaging in water recreation. The Draft EIR's omission of essential information is unremedied.

The change from the DEIR's finding that the impact is *not* potentially significant to the FEIR's finding that it *is* potentially significant is also not accompanied by any new information regarding the nature and severity of the potentially significant impact. As a result, the DEIR omits essential information. (*County of Fresno, supra*, 6 Cal.5th at 519 ["a sufficient discussion of significant impacts requires not merely a determination of whether an impact is significant, but some effort to explain the nature and magnitude of the impact"]; *accord, Cleveland I, supra*, 3 Cal.5th at 514–15, 529.)

[14] The Draft EIR comment letter is at AR 6052-6065. The Figures and Exhibits submitted with the comment are at AR 7461-8889.

b. The FEIR's Responses Improperly Compress Analyzing the Significance of Impacts with Identifying Mitigation Measures

Instead of analyzing the significance of the beach water quality impact, the FEIR proposes mitigation by expanding Mitigation HYD-1. (AR 5786-88; 6544-50.) Substituting mitigation for impact analysis violates CEQA. (*Lotus v. Department of Transportation* (2014) 223 Cal.App.4th 645, 658 (*Lotus*) ["The failure of the EIR to separately identify and analyze the significance of the impacts . . . before proposing mitigation measures . . . precludes both identification of potential environmental consequences arising from the project and also thoughtful analysis of the sufficiency of measures to mitigate"]; *San Joaquin Raptor Rescue Center v. County of Merced* (2007) 149 Cal.App.4th 645, 663 (*San Joaquin Raptor II*) ["A mitigation measure cannot be used as a device to avoid disclosing project impacts"].)

c. The FEIR's Responses Require Recirculation of a Revised Draft EIR

Amendment of Mitigation HYD-1 to reduce a newly-identified potentially significant effect requires recirculation of a revised Draft EIR. (*Pesticide Action Network North America v. Department of Pesticide Regulation* (2017)16 Cal.App.5th 224, 252 (*Pesticide Action*); *Spring Valley Lake Assn. v. City of Victorville* (2016) 248 Cal.App.4th 91, 108 [recirculation required where EIR proposes "ostensibly feasible way to mitigate" impacts and "a complete redesign of the project's stormwater management system"]; *Gray v. County of Madera* (2008) 167 Cal.App.4th 1099, 1120 [EIR's failure to evaluate or discuss feasibility of water supply mitigation requires recirculation]; Guidelines, § 15088.5 (a).)

The new terms in Mitigation HYD-1 include applying San Francisco's regulatory program for stormwater control and modeling stormwater flows from the Parnassus campus to "demonstrate that future incremental increases in stormwater and/or wastewater from the campus site under the CPHP would not cause or contribute to any increase in overflow volumes from the City's CSS discharge structures." (AR 4064-65.) While this is an improvement over ignoring the problem, the FEIR simply assumes that HYD-1 would be effective in reducing the newly-identified significant impact to less-than-significant. This is insufficient. The FEIR's supporting evidence raises more questions than it answers. (AR 5787-88.) For example, would it be physically feasible to impound enough stormwater during the rainy season to reduce the campus contribution to the CSS and avoid contributing to CSS overflows?

Thus, recirculating a revised Draft EIR with the new mitigation and supporting evidence is required to provide opportunity for the public and other agencies to review and comment.

d. The FEIR's Responses Improperly Defer the Formulation of Mitigation Measures

Mitigation HYD-1 includes the post-approval deferral of formulation of mitigation based on future analyses outside of the EIR's public review process. Even if the DEIR had first analyzed the problem, which did not occur here, CEQA would not allow such deferral unless the EIR satisfied several criteria. The EIR would have to show that it was impracticable to develop mitigation during the CEQA process and that there is evidence that future mitigation is feasible and will be subject to specific performance standards. (Guidelines, § 15126.4 (a)(1)(B); *Golden Door Properties, LLC. v. County of San Diego* (2020) 50 Cal.App.5th 467, 518-525 (*Golden Door II*); *King & Gardiner Farms, LLC v. County of Kern* (2020) 45 Cal.App.5th 814, 858; *Cleveland II*, *supra*, 17 Cal.App.5th at 440-443 ["[i]mpermissible deferral of mitigation measures occurs when an EIR puts off analysis or orders a report without either setting standards or demonstrating how the impact can be mitigated in the manner described in the EIR"]; *California Clean Energy Committee v. City of Woodland* (2014) 225 Cal.App.4th 173 (*CCEC*) , 195 [a mitigation that does not commit the agency to specific action or standards is inadequate]; *POET, LLC v. State Air Resources Bd.* (2013) 218 Cal.App.4th 681, 740 (*POET I*) ["The deferral of the formulation of mitigation measures requires the agency to commit itself to specific performance criteria for evaluating the efficacy of the measures implemented."].)

Mitigation HYD-1 is a classic example of improperly deferred mitigation because it proposes a future process ungoverned by objective performance standards. An air pollution standard of "no increase in nitrogen oxide (NOx)" was held insufficient because the EIR established "no objective performance criteria for measuring whether the stated goal [*i.e.*, no net increase] will be achieved." (*POET I, supra*, 218 Cal.App.4th at 739-740.) Another case rejected a mitigation measure that proposed a "bilateral negotiation between a project proponent and the lead agency after project approval." (*Communities v. Richmond*, 184 Cal.App.4th at 92-6.) Here, MM HYD-1 is worse; it proposes a *unilateral* decision by the lead agency *after* project approval and *outside* of CEQA's public comment process.

Mitigation HYD-1 is also unenforceable. It includes no objective benchmarks, milestones, or reporting processes providing a basis for enforcement review or enforcement action by anyone outside of UCSF. CEQA requires that mitigations be enforceable. (*Lincoln Place Tenants Association v. City of Los Angeles* (2005) 130 Cal.App.4th 1491; *Federation of Hillside & Canyon v. City of Los Angeles* (2000) 83 Cal.App.4th 1252, 1261.) The lack of enforceability is illustrated by the Integrated Catchment Model (ICM) component of Mitigation Measure HYD-1, which includes many layers of contingency: establishing a baseline, conducting modeling, determining if new infrastructure is needed, determining UCSF's fair share, paying fair share cost, etc. (AR 5787.)

Mitigation HYD-1 contemplates that UCSF would pay "its proportional share of the costs of expanding the CSS." This measure is illusory because there is no adopted fair share fee program to turn the dollars into infrastructure. The EIR cannot find the impact less than significant based on UCSF's intention to pay a fair share of construction costs where there is no assured plan to build the infrastructure. (*Anderson First Coalition v. City of Anderson* (2005) 130 Cal.App.4th 1173, 1186-87.)

The FEIR admits that UCSF's contribution to combined sewer system overflows is potentially significant, but does not establish a threshold of significance for judging what degree of reduction of the contribution would reduce its contribution to less than "cumulatively considerable" in violation of CEQA. (*Lotus*, *supra*, 223 Cal.App.4th at 655 ["the EIR fails to identify any standard of significance, much less to apply one to an analysis of predictable impacts from the project"].)

UC was required — but failed — to revise the DEIR to analyze beach water quality impacts and to recirculate the revised DEIR for public and agency comment. The new information provided in the Final EIR triggers recirculation because it demonstrates that the DEIR circulated for comment on an issue of environmental import "was so fundamentally and basically inadequate or conclusory in nature that public comment was in effect meaningless." (*Laurel Heights Improvement Assn. v. Regents of University of California* (1993) 6 Cal.4th 1112, 1123, 1130 (*Laurel Heights II*); see also *Mountain Lion Coalition v. Fish & Game Com.* (1989) 214 Cal.App.3d 1043, 1052 ["If we were to allow the deficient analysis in the [DEIR] to be bolstered by a document that was never circulated for public comment . . . we would be subverting the important public purposes of CEQA"]; Guidelines, § 15088.5 (a)(4).)

C. The EIR Fails as an Informational Document Regarding Impacts to Transit Capacity

Three Muni lines run at the edge of the UCSF campus. These include the "N-Judah" line, which is the busiest in the Muni system. (AR 6097.) UC's findings acknowledge that the Project would have an impact on transit service: "The plan would increase traffic and demand for parking and public transit service." (AR 12.) Despite this, the DEIR failed to analyze the Project's impact on transit capacity:

> *Consistent with the CEQA Guidelines and the SF Guidelines*, the transportation impact analysis in this EIR analyzes the change to VMT [vehicle miles traveled] that would result from the implementation of the CPHP at the Parnassus Heights campus site. Changes to traffic operations in the study area (i.e., the level of service of project area intersections) and *transit operations (e.g. project generated transit ridership and effect on capacity utilization, potential delay to transit vehicles) is outside the scope of the CEQA analysis* and are not discussed below.

(AR 2035, italics added.)

The EIR further explains that impacts to transit are analyzed "for informational purposes only" in an appendix to the DEIR that "is provided for decision-makers' consideration, independent of the

environmental review process." (AR 2036.) The only purported analysis of transit impacts is contained in two Appendix paragraphs disclosing that the CPHP's generated vehicle trips and passenger loading activities "may periodically:

- Result in transit delay on Parnassus Avenue (6 Haight/Parnassus, 43 Masonic) and Irving Street (N Judah)
- Reduce accessibility by blocking multimodal transportation facilities, such as crosswalks, bicycle lanes, and/or transit stops."

(AR 3516.) The EIR Appendix further notes that "[T]here may be peak passenger travel periods where demand, either for the campus site overall, or for specific locations is greater than supply. During these periods there would be a higher chance of delay to transit or a reduction in access to transportation facilities." (AR 3517.) Relative to the inadequacy of this analysis, one expert traffic engineer noted that "[N]o feasibility study has been conducted on how much capacity is available to serve the UCSF expansion or how additional transit capacity can be provided to decrease solo vehicle trips." (AR 6097.) The DEIR applies no significance standard for impacts to transit capacity, makes no significance determination, and discussed no mitigation. The EIR's failure to analyze CPHP impacts on transit delay, and indirect increase to VMT is error that renders the EIR insufficient as an informational document.

1. Transit Delay Is a Cognizable Impact Under CEQA

While the DEIR is correct that automobile delay ("level of service" aka LOS) is no longer a CEQA measure of transportation impact, the same is not true for impacts to transit facilities. Impact to transit capacity is a relevant consideration under both the CEQA Guidelines and City Guidelines, with which the EIR purports to comply. (Guidelines, § 15064.3 (a)["[o]ther relevant consideration may include the effects of the project on transit"]; AR 991 [significance criteria include "[s]ubstantially delay public transit"]; 999 ["The department uses a quantitative threshold of significance and qualitative criteria to determine whether the project would substantially delay public transit"]; 1002 [required analysis for "public transit delay"]; 1005 [required cumulative analysis for "public transit delay"].) Guidelines Appendix G asks whether a project would "conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadways, bicycle and pedestrian facilities." (Guidelines, Appendix G, § XVII (a).) OPR's *Technical Advisory on Evaluating Transportation Impacts in CEQA* ("OPR Technical Advisory"), another document that the EIR purports to follow, includes a section entitled "Impacts to Transit" that provides in relevant part:

> Because criteria for determining the significance of transportation impacts must promote "the development of multimodal transportation networks" pursuant to Public Resources Code section 21099, subd. (b)(1), lead agencies should consider project impacts to transit systems and bicycle and pedestrian networks.

(AR 34406.) Rather than provide the required analysis, the FEIR doubles down on UC's position that

overcrowding a transit system is "not a CEQA concern." (AR 6120.) Incredibly, UC squarely points its finger at Muni to analyze the CPHP's impact on transit: "The CPHP is not responsible for analyzing the potential effects of Muni operational issues or changes, and Muni is expected to adjust operations accordingly." (AR 6113.) This is legal error. CEQA requires analysis of whether a project would overwhelm the existing transit system. (*Mission Bay Alliance v. Office of Community Investment & Infrastructure* (2016) 6 Cal.App.5th 160, 191 ["substantial evidence supports the conclusion that the Warriors can be expected to work with the transit agencies 'to provide additional . . . service' sufficient to mitigate the project's impacts on regional transit"].)

The FEIR asserts that UC's cramped view of its duties under CEQA is based "on the CEQA Guidelines and OPR Technical Advisory ["Advisory"]." (AR 6113.) As established above, Guidelines section 15064.3, subdivision (a) in no way supports omitting consideration of transit delay impacts. Similarly, the Advisory explains that "lead agencies should consider project impacts to transit systems and bicycle and pedestrian networks." (AR 34406.) While the Advisory also states that agencies "generally should not treat the addition of new transit users as an adverse impact," the "addition of new transit users" is not the same as overwhelming transit capacity. (AR 34406.) Further, the Advisory provides that impacts to transit capacity should be analyzed, at minimum, as a cumulative impact: "Increased demand throughout a region may, however, cause a cumulative impact by requiring new or additional transit infrastructure." (*Ibid*.)

2. Increased Transit Delay May Increase Vehicle Miles Traveled ("VMT")

Analysis of impacts to transit capacity is also required because overwhelming the transit system may have an indirect impact by increasing the Project's VMT. (AR 6096.) Transportation engineer Tom Brohard explained that "the table assigns relatively high percentages for transit use for faculty/staff/ students as well as residents. The higher transit percentages will likely go down if the transit system is overwhelmed and automobile use goes up." (AR 6096.) The CEQA Guidelines are in accord, noting that even a purely qualitative analysis of VMT "would evaluate factors such as the availability of transit." (Guidelines, § 15064.3 (b)(3).) A bare qualitative analysis is only allowed "if existing models or methods are not available." (*Ibid*.) Quantitative modeling is readily available for estimating VMT and transit impacts, and so must be utilized here. (AR 991-1003; *Berkeley Keep Jets Over the Bay Committee v. Board of Port Commissioners* (2001) 91 Cal.App.4th 1344, 1381 (*Berkeley Keep Jets*).)

In response, the FEIR inaccurately pronounced that "there is no evidence to suggest that transit crowding *alone* leads to an increase in VMT that would result in a significant impact under CPHP." (AR 6113-14, italics added.) This mischaracterization does not justify ignoring the issue. First, engineer Brohard's comment provides evidentiary support for the uncontroversial fact that overwhelming transit

would lead more people to choose automobiles. (AR 6096.) The City — which operates the transit system — agrees that "transit delay greater than one-half headway . . . might result in a significant impact . . . due to a substantial number of people riding transit switching to riding in private or for-hire vehicles." (AR 999].) Second, UC cannot justify ignoring transit overcrowding simply based on speculation that such overcrowding "alone" may not push VMT above the relevant significance standard. (Guidelines, § 15358 (a)(2) [requiring an EIR to analyze "indirect or secondary effects"].)

Moreover, even without transit overcrowding, the Project would increase VMT. (AR 6099 ["Here, VMT is shown to increase by 23% and 15% for the CPHP"].) Engineer Brohard explains that the existing transit system in the Project area may already be overwhelmed, so that the Project may result in higher VMT than disclosed in the DEIR. (AR 6096-97.) The EIR therefore fails as an informational document by lacking analysis as to whether the Project's predicted impact on transit overcrowding (AR 3516) would indirectly exacerbate the Project's acknowledged increase in VMT.

In summary, no authority supports UC's claim that transit overcrowding is "not a CEQA concern." (AR 6120.) The Guidelines, OPR Guidance, and San Francisco guidance demonstrate that it is a relevant consideration, and even provide methodology for analyzing the impact. Further, overcrowding transit may indirectly contribute to increased VMT. Finally, even if UC is correct that no significance standard is directly "applicable" due to its Constitutional status, that does not obviate the need for analysis where, as here, the record supports a fair argument of a significant impact.

D. The EIR Fails to Properly Analyze and Mitigate Construction Noise Impacts

Although construction-related impacts are sometimes trivialized because of their typically "short" duration compared to potentially indefinite operational impacts, that is not the case here — where the Project will be ongoing for nearly 30 years. The CPHP's "*Initial"* Phase projects would be under construction until 2030. (AR 1951.) The "*Future*" Phase of construction would go on for another twenty years — between 2030 and 2050. (*Id*.) This means that if UC starts construction in 2022 (as it says it will), "sensitive receptors" — people who live and work adjacent to and surrounding the Parnassus Heights campus would be exposed to nearly three decades worth of construction noise, activity and emissions. During that time, residences on all sides of the campus, some as close as 70 feet from active construction, would be menaced by sustained noise levels over 75 dBA. (AR 1956-57.)

The EIR attempts to minimize the extraordinary amount of expected noise, at times 27 dBA above ambient levels, by stating that they "would only occur a short percentage of the overall construction period." (AR 1955.) Considering the nearly three-decades of construction, this vague assertion is not reassuring. Potential health impacts of exposure should have been analyzed and effective mitigation identified, but were not. These failures violate CEQA and require revision of the EIR.

1. Predicted Noise Levels are Not Correlated to Identified Human Health Impacts

The EIR finds that construction activities implementing the CPHP would generate noise levels in excess of applicable standards, identified as a significant impact. However, the EIR must take the analysis a step further by correlating significant noise to potential health effects. (*County of Fresno, supra*, 6 Cal.5th at 520 [EIR failed to correlate significant emissions to human health impacts.].) The EIR violates CEQA because it fails to correlate significant construction noise impacts and resulting human health effects to neighbors.

CEQA requires an EIR to "identify and focus on the significant environmental effects of the proposed project…examin[ing] changes in the existing physical condition in the affected area," including "health and safety problems caused by the physical changes." (Guidelines, § 15126.2 (a).) This section "also suggests that a connection be drawn between . . . potential project emissions and human health impacts. Such a connection would meet CEQA's requirements." (*County of Fresno, supra*, 6 Cal.5th at 520.) If it is not scientifically possible to determine potential human health impacts, "the EIR itself must explain why, in a manner reasonably calculated to inform the public of the scope of what is and is not yet known about the Project's impacts." (*Ibid*.) Although *County of Fresno* addressed the need to correlate air emissions to human health, *Sierra Watch v. County of Placer* (2021) 69 Cal.App.5th 86 recently applied similar analysis to the effects of noise emissions on human health.

"CEQA requires that the EIR have made a reasonable effort to discuss relevant specifics regarding the connection between two segments of information already contained in the EIR, the general health effects associated with a particular pollutant and the estimated amount of that pollutant the project will likely produce." (*County of Fresno*, *supra*, 6 Cal.5th at 521.) As in *County of Fresno*, the Project EIR fails to correlate the Project's environmental effects with impacts to human health.

While the EIR contains a section titled "Health Effects of Environmental Noise" that identifies a list of "other potential health effects" from "high noise levels" (AR 1937), the EIR fails to identify the noise levels at which these health effects may occur, much less whether the Project's noise levels would trigger impacts. For example, the EIR generally states that noise results in "decreased performance for complex cognitive tasks, such as reading, attention span, problem solving, and memorization," but fails to identify whether and to what extent CPHP noise levels may cause these health impacts. (AR 1937.)

One commentor explained, "While the DEIR briefly mentions some of these 'other potential heath effects' from noise emissions, the DEIR does not correlate these various health effects (and others as reflected in WHO 2018) to noise emissions." (AR 6091.) UC responded that the discussion of health effects on DEIR pages 4.11-3 – 4 is provided as introductory information. (AR 6118.) The "introductory information" states that "noise can cause annoyance and can trigger emotional reactions like anger,

depression, and anxiety. WHO reports that, during daytime hours, few people are seriously annoyed by activities with noise levels below 55 dBA or moderately annoyed with noise levels below 50 dBA." (AR 1937.) Rather than address the health impacts identified by WHO, the noise section states:

> Construction equipment would comply with the City's Noise Ordinance restriction (noise level of 80 dBA or less at a distance of 100 feet), and the resultant predicted noise levels at the nearest receptors would be below this level. Therefore, project construction noise would not result in adverse health effects related to pain, the onset of hearing loss or other significant health effects.

(AR 1960.) This significance determination fails to correlate the level of noise that nearby residents would be exposed to for up to thirty years and whether those levels would produce health impacts described in the "introductory information." (AR 1937; see *County of Fresno, supra*, 6 Cal.5th at 520.)

Further, the EIR fails to connect large increases in dBA to potential health impacts. The EIR states that "analysis provided . . . indicates that noise levels from proposed peak demolition and construction activities at the closest receptors could exceed existing noise levels by as much as 27 dBA at receptors approximately 70 feet away." (AR 1951.) The EIR provides a table describing noise levels of normal construction equipment at 100 feet, and none lower than 70 dBA. (AR 1951.) Therefore, any residence within 100 feet would potentially be exposed to all-day noise levels of at least 70 dBA and as high as 80 dBA. (AR 1956.) The EIR fails to describe how this level of long-term noise would affect the health of neighbors or why that impact cannot yet be described. Our Supreme Court has identified this flaw: "Because the EIR as written makes it impossible for the public to translate the bare numbers provided into adverse health impacts or to understand why such translation is not possible at this time . . . the EIR's discussion of air quality" was inadequate." (*County of Fresno, supra*, 6 Cal.5th at 521.)

UC thus glosses over the health impacts that would result from CPHP construction noise. (AR 1959.) As held in *Berkeley Keep Jets, supra*, 91 Cal.App.4th at 1371 the "EIR's approach of simply labeling the effect 'significant' without accompanying analysis of the project's impact on the health of [] employees and nearby residents is inadequate to meet the environmental assessment requirements of CEQA"].) The EIR fails as an informational document because it does not correlate the admittedly high and long-lasting construction noise emissions to human health impacts on the surrounding community.

2. Noise Mitigation Measure NOI-1b Is Both Unenforceable and Impermissibly Deferred Mitigation

As discussed *ante*, the Guidelines allow deferral of some details of mitigation measures, to be developed after project approval. (Guidelines, § 15126.4, subd. (a)(1)(B).) However, CEQA requires that "the agency (1) commits itself to the mitigation, (2) adopts specific performance standards the mitigation will achieve, and (3) identifies the type(s) of potential action(s) that can feasibly achieve that

performance standard." (*Ibid*.) The CPHP EIR does not meet these requirements. Mitigation measure NOI-1b suffers from a myriad of flaws that renders it ineffective. It states:

> **CPHP Mitigation Measure NOI-1b: Construction Hours**
>
> Construction hours *shall be restricted* to the hours listed in the table below. In rare circumstances, *work may need to occur* outside of these work hour limits. In such cases, UCSF Community and Government Relations will receive advance notice from the project manager, at least one week in advance as feasible, and will engage the community to identify measures to minimize potential impacts. These measures may include, but not be limited to, restricting work to smaller time windows, condensing the overall duration of nighttime work to the degree feasible, and erecting temporary barriers to shield the short-term nighttime activity.

Construction Hours

	"Not Noisy" Work[1]		Noisy Work	
	Regular hours	**Extended hours[2]**	**Regular hours**	**Extended hours**
Monday - Friday	7:00 a.m. to 5:00 p.m.	5:00 p.m. to 8:00 p.m.	8:00 a.m. to 5:00 p.m.	
Saturday		8:00 a.m. to 5:00 p.m.		9:00 a.m. to 4:00 p.m.
Sunday		8:00 a.m. to 5:00 p.m.		

1 "Not Noisy" work = 80 decibels or less at 100 feet; "Noisy" work = more than 80 decibels at 100 feet.
2 Extended hours to be considered by UCSF Community and Government Relations with advance notice from the project manager.

(AR 1953, italics added.) The first sentence states that the construction hours "shall be restricted" as listed on the table; the next sentence states that work "may need to occur outside of these work hour limits." (*Ibid*.) NOI-1b does not impose finite restrictions as construction may proceed 24 hours a day when "need[ed.]" The mitigation is therefore not effective or enforceable.[15]

In the event of after-hours construction work, NOI-1b provides a short list of measures that "may" be imposed to reduce resultant noise impacts. (*Ibid*.) "These measures *may* include . . . restricting work to smaller time windows, condensing the overall duration of nighttime work to the degree feasible, and erecting temporary barriers to shield the short-term nighttime activity." (*Ibid*.) The first problem is that "smaller time windows" and "condensing the overall duration" are not performance standards, as required. As held in *King & Gardiner Farms, LLC v. County of Kern* (2020) 45 Cal.App.5th 814, 858, "[t]he terms 'increase' and 'reduce'— even though preceded by the mandatory term 'shall' and modified by the phrase 'to the extent feasible'— are not specific performance standards." The EIR provides no

[15] The EIR misrepresents that NOI-1b would prevent nighttime construction noise. (AR 1959 ["Implementation of CPHP Mitigation Measure NOI-1b would ensure that nighttime noise impacts from construction activities would be avoided"]; 1960 ["Because construction would be restricted by CPHP Mitigation Measure NOI-1b to only occur during daytime hours, health effects associated with the potential for nighttime awakenings would be avoided"].)

noise level threshold, measurement, or performance standard for after-hours work. Finally, there is no analysis of what the referenced "temporary barriers" would consist of or whether they would be effective to mitigate noise to an [unstated] standard. Ambient "nighttime noise levels should be 45 dBA or below, and short-term events should not generate noise in excess of 60 dBA." (AR 1937.) NOI-1b fails to address how after-hours work would relate to these levels and fails to impose any type of performance standard that would be used to enforce this mitigation measure.

Rather than prohibit construction outside of regular working hours to protect the health of neighbors, the adopted mitigation measure for noise is ineffective and impermissibly deferred without performance standards. The mitigation does not support a finding that the Project's construction noise would be less than significant. The EIR is inadequate on this issue and must be revised.

E. The EIR Fails to Lawfully Assess Impacts on Historic Buildings[16]

1. The EIR's Conclusion That It Is Infeasible to Avoid Demolishing Historically Significant Buildings, Including UC Hall, Is Based on Errors of Law and Is Not supported by Substantial Evidence

The Project proposes to demolish many buildings that it concedes are historically and culturally significant, are eligible for listing in the California Register of Historic Resources or are already so listed, and as to which the demolition represents a significant environmental impact. These buildings include UC Hall, Millberry Union, School of Dentistry, Langley Porter Psychiatric Institute, Aldea San Miguel Housing Buildings 8, 10, and 12, and Saunders Court. (AR 1738-49; 1755-56; 3890-3906; 3912-13; AR 6621-22; 238-243.)

The DEIR finds these significant impacts unavoidable because — according to UCSF — it is infeasible to continue to use these buildings. Just six years ago, however, UCSF's 2014 LRDP did not propose to demolish UC Hall, Millberry Union, School of Dentistry, Aldea San Miguel Housing Buildings 8, 10, and 12, and Saunders Court. Therefore, it was presumptively feasible to continue to use these buildings in 2014. In fact, the 2014 LRDP proposed to re-purpose UC Hall and Milberry Union for student housing (AR 13472; 13523-24); to renovate Saunders Court "to improve its functionality for general use and special events" (AR 13526); and to continue to use the School of Dentistry building (AR 13483; 13484-85) and Aldea housing buildings (AR 13520).

The record contains no evidence that anything has changed to make it infeasible to continue the 2014 LRDP's plans for one of more of these buildings rather than to demolish all of them. "[T]he deference provided to governing bodies with respect to land use planning decisions must be tempered by the presumption that the governing body adopted the mitigation measure in the first place only after due

[16] These issues are "exhausted" in comments at AR 6027-29; 6031-39; 888-89.

investigation and consideration." (*Napa Citizens, supra,* 91 Cal.App.4th at 359.) One of CEQA's core purposes is to avoid unnecessary environmental harm. The lead agency "may not . . . approve the project as proposed if there are feasible alternatives or mitigation measures that would avoid or substantially lessen the adverse environmental effects." (*Stockton Citizens for Sensible Planning v. City of Stockton* (2010) 48 Cal.4th 481, 498; see also *County of Fresno, supra,* 6 Cal.5th at 524-25 ["Even when a project's benefits outweigh its unmitigated effects, agencies are still required to implement all mitigation measures unless those measures are truly infeasible"]; *City of San Diego, supra,* 61 Cal.4th at 967; *Newhall Ranch I, supra,* 62 Cal.4th at 231 ["the lead agency must adopt feasible mitigation measures or project alternatives to reduce the effect to insignificance"].)

Mitigations or alternatives are not infeasible unless they make it impractical to proceed with the project. (*Citizens of Goleta Valley v. Board of Supervisors* (1988) 197 Cal.App.3d 1167, 1181 (*Goleta I*); *Uphold Our Heritage v. Town of Woodside* (2007) 147 Cal.App.4th 587, 599 (*Uphold Our Heritage*); *Preservation Action Council v. City of San Jose* (2006) 141 Cal.App.4th 1336 (*Preservation Action*) [city's finding that reduced-size alternative was infeasible due to competitive disadvantage was not supported by substantial evidence where record contained no data about competing stores].)

Here, neither the EIR nor UCSF's CEQA Findings present any evidence that it is infeasible to avoid demolishing each or any of these buildings. (AR 3878-3915; 238-43.) Given the contrast between the CPHP and the 2014 LRDP, this represents a significant omission of essential information and a failure to support an environmental conclusion with substantial evidence. (*County of Fresno, supra,* 6 Cal.5th at 527 [EIR must evaluate whether a mitigation measure is infeasible.].)

The FEIR's response to comments is also inadequate. The response and the Board's Findings say, in essence, that UCSF prefers to demolish all of these buildings so it is infeasible not to demolish them. (AR 6042; AR 238-42.) That preference does not equate to infeasibility. Neither the FEIR nor the Findings analyze ways to modernize the campus without demolishing every historically significant buildings. As the San Francisco Historic Preservation Commission commented, "the DEIR did not adequately consider alternatives that focused on the preservation of historic resources. Specifically, the DEIR did not analyze an alternative that retained just UC Hall, the building where the Zakheim murals are located, or just Toland Hall, the part of UC Hall where the Zakheim murals are located." (AR 5812.) This is an error of law because, as noted above, mitigation measures or alternatives are not infeasible unless they make it impractical to proceed with the project. (*City of Marina, supra,* 39 Cal.4th 341 at 368-69 ["CEQA does not authorize an agency to proceed with a project that will have significant, unmitigated effects on the environment, based simply on weighing of those effects against the project's benefits, unless the measures necessary to mitigate those effects are truly infeasible"].)

2. The DEIR Fails to Evaluate UCSF's Parnassus Campus as a Historic Resource or Historic District

The DEIR and the two *Carey & Company* reports upon which its analysis of historic buildings is based address one building at a time and fail to evaluate UCSF's Parnassus campus as a "historic resource" or "historic district" (defined in Public Resources Code section 5020.1, subdivisions (j) and (h), respectively) in its own right. (AR 1738-56; 3890-3913; 40072-130 [Carey 2011]; 40131-393 [Carey 2003].) Indeed, of the many "Form 523s" prepared for the many historic buildings on the campus and attached to the 2003 and 2011 Carey reports, not one describes the "Resource Present" as a "District" (AR 40106-121 [Carey 2003], including 40106 [UC Hall]; 40109; 40111 [Langley-Porter]; 40144; 40116; 40118; 40120]; 40131-40393 [Carey 2011], including 40283 [Aldea San Miguel 8]; 40287 [Aldea San Miguel 10]; 40291 [Aldea San Miguel 12]; 40295 [Ambulatory Care Center]; 40299 [Community Dental Clinic Building]; 40303 [Environmental Health and Safety (EH&S) Building]; 40305 [Faculty Alumni House]; 40309 [HSIR East]; 40313 [HSIR West]; 40317; 40319; 40351 [Milberry Student Union Building].)

Architectural historian Kara Brunzell explains this point:

> Preparers of the DEIR were clearly aware of the importance of looking at the campus as a whole. The document acknowledges districts as one of the important categories of historical resources . . . and divides the campus into six districts "based in part on existing land use patterns." ¶ An adequate cultural resources DEIR section would bring a similar intellectual rigor to the investigation of the potential historical significance of the campus as an entity in its own right, using a district (or districts) to organize the discussion of the built environment's significance. This would allow the cultural resources section to reflect the spatial and historical relationships between buildings, the street grid, open spaces, and other features of the site. . . . The attempt to evaluate each building individually without considering context, setting, or the site as whole means that the DEIR has not considered a potential historical resource: the Parnassus Heights Campus.

(AR 6037.)[17] CEQA requires that in preparing an EIR a lead agency must "use its best efforts to find out and disclose all that it reasonably can." (Guidelines, § 15144.) CEQA defines three categories of historic resources: mandatory, presumptive, and discretionary. (*Valley Advocates v. City of Fresno* (2008) 160 Cal.App.4th 1039, 1051 (*Valley Advocates*); § 21084.1; Guidelines, § 15064.5 (a).)

Mandatory historic resources are those "listed in, or determined to be eligible for listing in, the California Register of Historical Resources." (*Valley Advocates*, *supra,* 160 Cal.App.4th at 1051; § 21084.1, first sentence; Guidelines, § 15064.5 (a)(1).) Presumptive historical resources are those listed in a local historic register or identified as significant in a qualified historical resource survey. (*Valley Advocates*, *supra,* 160 Cal.App.4th at 1054; § 21084.1, third sentence; Guidelines, § 15064.5 (a)(2).)

[17] The EIR's analysis of visual impacts divides the campus into several "districts." (AR 1552; 3700.) It is inarguable that the site is more than a collection of unrelated buildings.

Lead agencies also have a mandatory duty to exercise their discretion to determine if a resource is historic. (Guidelines, § 15064.5(a)(3).) Discretionary historic resources are those a lead agency has discretion to designate even if not listed in a state or local register or identified in a qualified survey. (*Friends of Willow Glen Trestle v. City of San Jose* (2016) 2 Cal.App.5th 457, 467 ["final sentence of section 21084.1 clearly permits a lead agency to make a determination as to whether a resource that is neither deemed nor presumed to be a historical resource is nevertheless a historical resource for CEQA purposes"]; *Valley Advocates, supra*, 160 Cal.App.4th at 1059-60; § 21084.1, final sentence; Guidelines, §§ 15064.5(a)(3), (a)(4) .)

Lead agencies have a mandatory duty to exercise their discretion to determine if a resource is historic. (Guidelines, § 15064.5(a)(3) ["Generally, a resource shall be considered by the lead agency to be 'historically significant' if the resource meets the criteria for listing on the California Register of Historical Resources . . ."].) The word "shall" identifies "a mandatory element which all public agencies are required to follow." (Guidelines, § 15005 (a); see *Valley Advocates, supra*, 160 Cal.App.4th at 1060, 1063 ["a prejudicial abuse of discretion occurs when a public agency is misinformed regarding its discretionary authority and, as a result, does not actually choose whether to exercise that discretionary authority"].) Where, as here, the agency fails to exercise its discretionary authority to determine if a resource is a "discretionary" historic resource, the error is reviewed de novo as a failure to proceed in the manner required by law. (*Valley Advocates, supra*, 160 Cal.App.4th at 1063.)

UC failed to proceed in the manner required by law because it failed to exercise its discretion to determine if the campus as a whole is a "discretionary" historic resource. (§ 21084.1; Guidelines, § 15064.5 (a), citing §§ 5020.1 and 5024.1.) "'Historic district' means a definable unified geographic entity that possesses a significant concentration, linkage, or continuity of sites, buildings, structures, or objects united historically or aesthetically by plan or physical development." and "'Historical resource' includes, but is not limited to, any . . . area, which is historically . . . significant." (§§ 5020.1 (h), (j).) The EIR gives this no consideration.

The FEIR's response to comments (AR 6040-41) points to only two sentences in the DEIR or its supporting materials where the concept of a "historic district" is mentioned, as if this shows the concept was evaluated and rejected. It fails to reference any other information in the DEIR — because there is none — that explains why the DEIR or FEIR declined to evaluate the campus for qualification as a historic district. The response also refers to the new evaluation in FEIR Appendix HR (AR 6609-29) as if this provides the missing analysis. It does not. In fact, the new memorandum in Appendix HR says nothing about the campus as a "historic district" and never uses the word "district."

Instead, the response to comments offers an entirely new rationale for not evaluating the campus as a historic district: "Given the wide range of architectural styles and uses of the buildings, the long period of development (1917-2010), and a lack of overall thematic context or initial master plan guiding development from the beginning, it was determined that the campus as a whole did not constitute a historic district." (AR 6041.) This rationale is not in the DEIR; it is significant new information requiring recirculation of a revised Draft EIR for public and agency comment. A change in EIR reasoning supporting a significance conclusion warrants recirculation. (*Sutter Sensible Planning, Inc. v. Board of Supervisors* (1981) 122 Cal.App.3d 813, 817 (*Sutter*) [recirculation required because the FEIR provided 'a more elaborate discussion of ground water availability and the projected impact of the plant on the water table']; *Pesticide Action, supra*, 16 Cal.App.5th at 252 [recirculation required for new rationale for significance conclusion in FEIR].)

Also, the new evaluation in the FEIR's Appendix HR presents aerial photos/maps showing all historic resources that would be demolished or altered. (AR 6621-22.) This aerial photo/map is a revelation. The DEIR failed to provide a visual aid showing the radical transformation of the entire campus from the loss of many historically significant buildings. This omission prevented a reader of the DEIR — even a careful reader — from understanding the wide geographic scale and intensity of the transformation the CPHP proposes for the campus as a whole.

Thus, the EIR omits essential information regarding the environmental setting and fails to assess the CPHP's potentially significant effects on all potential historic resources in the affected environment.

F. The EIR Fails to Adequately Assess Impacts from Air Emissions[18]

1. The EIR Impermissibly Piecemeals the Project's Human Health Impacts from Toxic Air Contaminant Emissions

The EIR fails as an informational document by not disclosing the human health risk resulting from the Project's combined emissions of toxic air contaminants ("TAC"). The EIR acknowledges that the Project "would result in development that would generate operational emissions of TACs and result in localized contributions to PM2.5 concentrations from a variety of sources." (AR 1684.) The EIR also acknowledges that Project construction over 30 years would generate TAC emissions. (AR 1671.) While the EIR utilizes a significance threshold of ten increased cancer risks, its analysis of the Project's impacts against this standard is defective because it piecemeals various emission sources and thereby fails to identify the overall health risk resulting from the combined emissions from all Project emissions.

Specifically, the EIR concludes that the Project's construction emissions for the Irving Street Arrival, RAB, New Hospital, and Aldea Housing Densification would result in a combined 9.47

[18] The issues in this section were exhausted in public comments at AR 6069-6075; 890-896.

increased cancer risks (AR 5962-63), very close to the applicable significance standard of ten. (AR 1642.) UC keeps the health impact below the threshold by arbitrarily omitting key elements of the Project's TAC emissions. (AR 5964.) The expert retained by petitioner Parnassus Neighborhood Coalition ("PNC") explained that state guidance requires an overall health risk assessment to account for both construction and operational TAC emissions, stating in relevant part:

> According to OEHHA guidance, as referenced by the DEIR, "the excess cancer risk is calculated separately for each age grouping and then summed to yield cancer risk at the receptor location." However, the HRAs conducted in the DEIR fail to sum each age bin to evaluate the total cancer risk over the course of the Project's construction and operation, as is required by the guidance. This is incorrect and thus, an updated analysis should quantify the Project's construction and operational health risks and then sum them to compare to the BAAQMD threshold of 10 in one million, as referenced by the DEIR (p. 4.2-16).

(AR 5964.) The most significant sources for the omitted operational TAC emissions include mobile-source emissions and emissions from the New Hospital. The mobile-source TAC emissions omitted from the EIR's analysis are not insignificant, as PNC's expert further explains:

> [W]hile DEIR includes an HRA assessing the health risk impacts associated with the emergency generators associated with the operation of the RAB component of the Initial Phase of the Project, the DEIR fails to evaluate the health risk impacts resulting from the Project's entire operation. This is incorrect, as the DEIR indicates that the CPHP would result in 52,200 daily vehicle trips throughout operation, which will result in additional exhaust (p. 4.15-29, Table 4.15-7).

(*Ibid.*, italics added.) TAC emissions from the New Hospital are also not insignificant. "Fume hood emissions also contribute to exposure to TACs." (AR 11049.) UC revealed in the 2014 LRDP EIR that "Risks associated with fume hood emissions were estimated at 4.46 in one million at the maximally exposed individual . . ." (AR 10936.)

The FEIR does not supply this missing analysis of mobile-source or Hospital TAC emissions nor provide any expert testimony demonstrating that California Office of Health Hazard Assessment ("OEHHA") does not require it. (AR 6012.) Instead, the FEIR relies upon the "plan-level" nature of its review as to these Project components to conclude that health risks from the New Hospital and future phase projects will undergo separate subsequent CEQA review. (*Ibid*.)

This is a legal error. First, the FEIR does not explain why it is too speculative to include these emission sources in the overall health risk as required by Guidelines section 15145. "The fact more precise information may be available during the next tier of environmental review does not excuse [an agency] from providing what information it reasonably can now." (*Cleveland II*, *supra*, 17 Cal.App.5th at 440; *San Joaquin Raptor II*, *supra*, 149 Cal.App.4th at 660 [EIR was required to analyze "an aspect of the Project itself, as well as a reasonably foreseeable use"].) Readily available information about the

Project's operational TAC emissions includes the acknowledged 28,800 daily vehicle trips, a major source of diesel particulate emissions (AR 4204), as well as the Project's increase in mobile-source diesel consumption by 505,297 gallons per year. (AR 1779.) Additionally, conservative estimates of the number of hood fumes required for the New Hospital are available. (AR 10936 ["At present, there are approximately 208 active fume hoods in operation at the Parnassus Heights campus site"].)

Thus, ample information regarding the Project's mobile-source and Hospital TAC emissions was available to estimate the Project's combined health risk. Either emission source alone, when added to the Project's acknowledged 9.47 increased cancer risks, would overcome the relevant significance standard of ten increased cancer risks. The addition of both emission sources together would put the Project's combined health risk well beyond that standard.

UC alternatively asserted in the FEIR that the health risks from the various components of the Project should not be measured against the project-level threshold of ten increased cancers, but rather the cumulative threshold of 100 increased cancers. (AR 6012-13.) This position ignores that these different aspects of the CPHP are nowhere else identified in the EIR as separate projects for purposes of CEQA. Indeed, nowhere does UC claim that these various construction activities have independent utility. In fact, the EIR combined the emissions from these various construction activities for purposes of assessing the Project's impact from criteria air emissions. (Compare AR 1658 [combining criteria air emissions for different construction activities] with 1679-1682 [dividing human health impacts according to construction activity].) UC's argument that the Project's various emission sources should be measured against a cumulative threshold constitutes impermissible piecemealing.

In short, the EIR fails as an informational document by piecemealing the Project's TAC emissions for purposes of minimizing the resulting health risk to nearby residents.

2. The EIR's Use of Thresholds of Significance for the CPHP's Cancer Risk Impact Is Based on Legal Errors and Not Supported by Substantial Evidence

The EIR errs by using thresholds of significance for both project-level and cumulative cancer risk that fail to take into consideration the severity of existing cancer risk conditions.

a. The EIR's Thresholds of Significance for Cancer Risk

The DEIR explains that "[a]s part of assessment of Initial Phase projects, a HRA [Health Risk Assessment] was conducted to provide quantitative estimates of health risks from exposures to TACs" and that the EIR "uses quantitative significance thresholds adopted by BAAQMD [Bay Area Air Quality Management District]." (AR 1650.)[19] For "project level" TAC related cancer risk, this threshold is

[19] The DEIR states: "These thresholds are based on substantial evidence identified in Appendix D

"exposing receptors to toxic air contaminant emissions that (1) result in a cancer risk greater than 10 cancer cases per 1 million people exposed in a lifetime . . ." (AR 1645.)[20] For "cumulative" TAC-related cancer risk, the EIR uses a threshold of 100 per one million, stating: "BAAQMD considers a cancer risk of 100 per one million or less to be within the "acceptable" range of cancer risk. (AR 1650.)

b. UC Failed to Adopt Its Cancer Risk Thresholds of Significance in a Public Rule-Making Process[21]

The EIR uses cancer risk thresholds of significance adopted by BAAQMD for general use without adapting them or how they are applied to reflect anything unique about this project or its environmental setting. CEQA requires that before UCSF uses such generalized thresholds of significance, it must adopt the thresholds by a public rule-making process, and must show in that process that the thresholds are supported by substantial evidence. (*Golden Door Properties, LLC v. County of San Diego* (2018) 27 Cal.App.5th 892, 903 (*Golden Door I*).) By failing to undertake this process, UCSF failed to proceed in the manner required by law.

c. The EIR Fails to Adequately Describe Existing Cancer Risk Conditions

The DEIR describes existing conditions (*i.e.*, baseline) for TAC-related cancer risk from ambient TAC concentrations as 248.3 cases per million. (AR 1636.) The DEIR describes the existing conditions for cancer risk from diesel particulates (DPM) as 480 in one million in the year 2000 in the Bay Area; and 520 in one million in the year 2012 statewide. (AR 1637.) The DEIR indicates that in 2000, the California Air Resources Board (CARB) approved a Diesel Risk Reduction Plan that it anticipated would result in an 80 percent decrease in statewide diesel health risk in 2020 compared with the diesel risk in 2000. The DEIR does not disclose what the statewide diesel risk was in 2000, so the reader cannot calculate what an 80% reduction would be in 2020. The DEIR also does not disclose what the statewide diesel risk is in 2020.

The EIR's description of the overall cancer risk is insufficient because the DPM baseline risk is not current as of the date of the Notice of Preparation of the EIR.[22] The FEIR responds to this comment by calculating this risk using projections CARB made in the year 2000 regarding reductions in DPM cancer risk that could be expected by the year 2020. The response provides, for the first time, an

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of the 2017 BAAQMD CEQA Guidelines and its 2009 Justification Report." (AR 1650 [DEIR 4.2-24].) The 2017 BAAQMD CEQA Guidelines is at AR 15672. Appendix D thereof is at 15832. The purported "justification" and "substantial evidence" for these thresholds is at AR 15860-15876.

[20] The DEIR also uses a threshold of "localized PM2.5 concentration exceeding 0.3 ìg/m3" (AR 1650.) The DEIR also establishes more general threshold of significance, as follows: "Expose sensitive receptors to substantial pollutant concentrations." (AR 1645.)

[21] This claim is exhausted at AR 896.

[22] This claim is exhausted at AR 6071.

estimate of the statewide diesel risk in 2000, which it uses to calculate a current basin wide cancer risk of 96 cases of cancer per 1 million people. (AR 6076.)

This response is too little, too late. It is an estimate based on 20 year-old projections, not a current analysis when the Notice of Preparation issued. (*South Coast*, *supra*, 48 Cal.4th at 327, citing Guidelines, § 15125 (a).) Also, the FEIR suggests the TAC and DPM risks are additive, stating: "Other toxic air contaminant emissions within the basin will further contribute to this estimated risk." (AR 6076.) Thus, baseline cancer risk from TAC and DPM may be 344 cases per one million people (*i.e.*, 248 cases per one million people for TAC plus 96 cases per 1 million for DPM). (AR 6076.) The omission of this information from the DEIR precludes informed public comment.

d. The DEIR's Assessment of the "Project-Level" Cancer Risk Impact Is Based on Legal Error and Not Supported by Substantial Evidence

The DEIR concludes that the Project's "project-level" or incremental increase in cancer risk is less than significant because the project would increase cancer risk by 9.8 new cases per one million people, which is below the DEIR's threshold of significance of any increase in risk over 10 cases per million. (AR 1671-84 [Impact AIR-3: Construction]; 1684- 89 [Impact AIR-4: Operations].) The DEIR borrows this threshold from BAAQMD's CEQA Guidelines and then deploys it without regard to the extreme baseline cancer risk in San Francisco. In doing so, the DEIR commits the fundamental error of failing to add the Project's effects to the baseline for purposes of determining significance because it applies the threshold without regard to the magnitude of the baseline cancer risk. Under CEQA, an EIR analyzes the environmental impacts of the proposed project on the environmental setting (or "baseline"). (*South Coast*, *supra*, 48 Cal.4th at 315; *San Joaquin Raptor I*, *supra*, 27 Cal.App.4th at 722-23; *Eel River*, *supra*, 108 Cal.App.4th at 881-82; Guidelines, §§ 15125 (a)(1), 15126.2 (a).)

The baseline cancer risk in San Francisco is 248 cases per million from TAC plus at least 96 cases per million from DPM. The DEIR's uncritical use of the ten cases per million BAAQMD threshold implies that an increase of less than ten cases per million is always less than significant, regardless of the baseline risk. This is a legal error, because the severity of existing conditions is always a factor in determining significance of project impacts. (*CBE v. Resources*, *supra*, 103 Cal.App.4th at 114 ["the guiding criterion on the subject of cumulative impact is whether any additional effect caused by the proposed project should be considered significant given the existing cumulative effect"]; *Kings County*, *supra*, 221 Cal.App.3d at 718.) The EIR's unevaluated assumption that an increase of less than ten cases per million is always less than significant is a policy judgment, not a finding of fact based on evidence. This violates CEQA because determinations of significance must be based on evidence. (*Amador Waterways*, *supra*, 116 Cal.App.4th at 1108-1109 ["thresholds cannot be used to determine

automatically whether a given effect will or will not be significant"].)

Moreover, while "the existence of substantial evidence supporting the agency's ultimate decision . . . is not relevant when one is assessing a violation of [CEQA's] information disclosure provisions,"[23] the EIR's use of this threshold is not supported by substantial evidence. Other than pointing to the BAAQMD threshold, the DEIR fails to explain why the Project's admitted incremental increase in cancer risk is not significant given that it is being added to a severe baseline cancer risk.

Instead, the FEIR's responses to comments states that "The 10.0 in one million cancer risk criterion. . . is also the level set by the Project Risk Requirement in the Air District's Regulation 2, Rule 5 new and modified stationary sources of TAC, which states that the Air Pollution Control Officer shall deny an Authority to Construct or Permit to Operate for any new or modified source of TACs if the project risk exceeds a cancer risk of 10.0 in one million." (AR 6077.) Neither the response to comments or the BAAQMD CEQA Guidelines (at AR 15866) explain why a threshold used in a different regulatory program to deny permission to operate a stationary source of TAC represents an appropriate threshold for determining significance under CEQA, where such a determination does not require denial of the project. Indeed, BAAQMD's Regulation 2, Rule 5 process for new and modified stationary sources of TAC may require the project to "implement Best Available Control Technology for Toxics (T-BACT), as determined by BAAQMD." (AR 15730.) According to BAAQMD, "Regulation 2-5 dictates that the cancer risk is acceptable if it is below one in a million, or if T-BACT is applied and the cancer risk is below 10 in a million." (AR 16163.) Thus, for UC to accurately use BAAQMD's Regulation 2-5 criterion for issuing stationary source permits as its threshold of significance, it would have to use the "one in a million" threshold instead of the "ten in a million" threshold because BAAQMD has not required that the CPHP implement T-BACT.[24]

e. The DEIR's Assessment of the Project's Cumulative Increased Cancer Risk Is Based on Legal Error and Not Supported by Substantial Evidence

The DEIR concludes that the Project's "cumulative" increase in cancer risk when considered in combination with other sources of risk is less than significant (AR 1695-97; 3846-48 [Impact C-AIR-2: Construction and Operation].) For cumulative increased risk, the DEIR uses a threshold of any exceedance of 100 cases per one million because "BAAQMD considers a cancer risk of 100 cases per one million or less to be within the 'acceptable' range of cancer risk." (AR 1650; 1653; 3800; 3803.)

Assuming arguendo that this is an appropriate threshold for assessing whether the Project's cumulative cancer risk impact is significant, the DEIR fails to apply it. After stating this threshold, the

[23] *Communities v. Richmond*, *supra*, 184 Cal.App.4th at 82.

[24] Also, as discussed in the next section, "acceptable" under CEQA is not the same as "significant."

DEIR changes it, stating: "Because the cumulative increase in cancer risk from all sources would be well below 100 in one million . . . the CPHP's cumulative impact to local health risk and hazards would be reduced to less than significant with identified mitigation." (AR 1696, 3847.)

Thus, instead of considering a post-project cumulative cancer risk above 100 cases per one million to be significant, the DEIR shifts to requiring that the cumulative "increase" in cancer risk contributed by the Project in combination with other projects exceed 100 cases per one million to be found significant. This shift reflects several legal errors.

First, the DEIR is confusing as to what the cumulative threshold is, which frustrates meaningful public comment. Therefore, the DEIR must be revised and recirculated using a clear and stable cumulative threshold.

Second, both thresholds, as described at AR 1650 and employed at AR 1696 for both construction and operation, suffer the same legal defect as the incremental standard: they are applied without regard to the baseline cancer risk. That risk in San Francisco is 248 cases per million from TAC plus at least 96 cases per million from DPM. According BAAQMD and the DEIR, this baseline risk is "unacceptable." The cumulative increase in cancer risk contributed by the Project in combination with other projects would make this existing "unacceptable" condition worse. The EIR fails to explain why the Project's admitted cumulative increase in cancer risk above an already unacceptable baseline level is not significant given that it is being added to a severe cancer baseline. (*CBE v. Resources, supra*, 103 Cal.App.4th at 114 ["the guiding criterion on the subject of cumulative impact is whether any additional effect caused by the proposed project should be considered significant given the existing cumulative effect"]; *Kings County, supra*, 221 Cal.App.3d at 718.)

This legal error is illustrated by a simple example. According to the DEIR, the threshold of a cumulative increase of 100 cases per million applies regardless of baseline risk. Thus, a project with a baseline cancer risk of 50 cases per million would need a post-project cancer risk of 150 cases per million for the cumulative impact to be deemed significant, while a project with a baseline cancer risk of 75 cases per million would need a post-project cancer risk of 175 cases per million for the cumulative impact to be deemed significant. Thus, a project with the higher baseline risk (75 per million) would not be deemed to have a significant cumulative impact with a post-project cancer risk of 150 cases per million, but a project with the lower baseline risk (50 per million) would be deemed to have a significant cumulative impact with a post-project cancer risk of 150 cases per million. In short, the widely repudiated "ratio theory" in which "the greater the overall problem, the less significance a project has in

a cumulative impacts analysis" is improperly embedded in the EIR's threshold of significance for the Project's cumulative cancer risk impact. (*Kings County, supra*, 221 Cal.App.3d at 721.)[25]

The Final EIR responds to comments regarding the invalidity of the EIR's use of the cumulative threshold by noting that the BAAQMD considers any cancer risk below 100 cases of cancer in one million people to be "acceptable" and cancer risk above 100 cases of cancer in one million people to be unacceptable. (AR 6082-83.) Thus, the EIR must explain why any CPHP-induced increase in cancer risk above the severe existing condition (which clearly exceeds 100 in one million) is not significant. The EIR fails to do so. This is a failure to proceed in the manner required by law.

The FEIR responds to the comment that the DEIR employs the TAC cancer risk thresholds in a manner that fails to account for the severity of existing baseline conditions by arguing that these thresholds are supported by "substantial evidence." (AR 6076-78.) This is not responsive to the comment that the EIR commits a procedural/informational error by "failing to add the Project's effects to the baseline for purposes of determining significance."

The FEIR's response to comments argues that because BAAQMD, San Francisco and other agencies agree that these thresholds are appropriate, this somehow provides "substantial evidence" supporting their use. (AR 6076-78.) The FEIR misconceives the task at hand, because the response is entirely abstract, untethered to the facts of this Project or its setting. (*Golden Door I, supra*, 27 Cal.App.5th at 903-905 ["the Efficiency Metric 'allows the threshold to be applied evenly to most project types,' but it does not account for variations between different types of development; nor does it explain why the per person limit would be appropriately evenly applied despite project differences. Without substantial evidence explaining why statewide GHG reduction levels would be properly used in this context, the County fails to comply with CEQA Guidelines"].)

CEQA neither requires nor allows the DEIR to use the BAAQMD's or EPA's judgment of "acceptable" cancer risk to determine the significance of the Project's impacts. (*Ebbetts Pass, supra*, 43 Cal.4th at 957 (error to conclude that compliance with pesticide restrictions precludes significant impact).) The EIR's reliance on the increase over 100 in one million threshold to determine cumulative significance improperly imports considerations of cost and feasibility of mitigation into a determination of significance, whereas CEQA requires that these determinations be made in distinct steps.[26] UC's discretion to decide that significant harm is "acceptable" in light of Project benefits arises at the end of

[25] The environmental justice implications of the DEIR's use of this threshold are dire.

[26] The EPA standard was designed to support a different regulatory scheme, not to support determinations of significance under CEQA. The EPA is permitted and required to consider factors of cost and feasibility in its regulation of toxics under the Clean Air Act.

the CEQA analysis, in a statement of overriding considerations, not at the beginning of the process, in determining whether impacts are significant. (*City of Marina, supra*, 39 Cal.4th 341 at 368-369.)

The FEIR argues that the 100 in one million cancer risk threshold is based on guidance developed by the United States EPA for "acceptable" risk. (AR 6077.) The response misrepresents actual EPA policy, which is to assess increased cancer risk based on a host of site-specific factors within a range of values from one in one million to 100 in one million. This policy reflects the agency's attempt to balance the costs and benefits of protecting public health in its implementation of a host of federal environmental laws, including the Clean Air Act, Clean Water Act, Resource Conservation and Recovery Act, CERCLA (Superfund), etc. (AR 898 [Starfield, L.E., "The 1990 National Contingency Plan: More Detail and More Structure, But Still a Balancing Act;" *Environmental Law Reporter*, June 1990].) Instead of following this analytic approach, the EIR selects one value at the least environmentally protective end of the EPA's "acceptable risk" range and uses it to determine the significance of the Project's impacts, but without regard to the Project's site-specific considerations.

The distinction is important, because where the impact does not exceed a threshold of significance erroneously inflated by the concept of "acceptable risk," UC is absolved of further legal obligation to mitigate the impact. As a result, the public cannot know whether UC would allow an unknown number of cancer cases to occur that it could have feasibly avoided had it scrupulously followed CEQA. Nor does the public know, had the EIR found the Project's additional cancer risk insignificant, whether UC would have found the Project's benefits outweigh its environmental and adverse human health effects. (*County of Fresno, supra*, 6 Cal.5th at 512 ["the EIR . . . is a document of accountability"].)

3. Additional Responses to a Comment Regarding the EIR's Method for Determining the Significance of Cumulative Cancer Risk are Inadequate

Commentors noted that the DEIR is confusing because it is unclear if it considers any resulting post-project cumulative cancer risk above 100 cases per one million to be a significant project impact, or if it requires that the cumulative "increase" in cancer risk contributed by the Project in combination with other projects exceed 100 cases per one million be found significant. (AR 6072-73.) The FEIR fails to respond to this comment or clarify how the threshold was applied.

The response also purports to find substantial evidence support for using these thresholds in the fact that BAAQMD developed its 100 in one million cumulative criterion because it is reflective of air quality in a 'pristine' portion of the Bay Area. (AR 6079.) It is difficult to see how this supports the EIR's use of the cumulative threshold to find this Project's cumulative cancer risk impacts to be less than significant. If the EIR uses the cumulative threshold to conclude that if the Project contributes to an

increase in cancer risk where total post-project cancer risk exceeds 100 cases of cancer per one million, then the fact that cancer risk in pristine areas is 100 in one million supports finding this Project's cumulative contribution to be "considerable" because it would increase cancer risk above the baseline cancer risk of at least 248 or 344 cases per one million people. Alternatively, if the EIR requires that the cumulative "increase" in cancer risk contributed by the Project in combination with other projects exceed 100 cases per one million to be found significant, then the fact that cancer risk in pristine areas is 100 in one million is irrelevant to the determination of significance.

The response to comments also refers to a 1,000-foot distance from sources of cancer risk. (AR 7078; 6080.) The response does not explain how this distance supports the EIR's application of its thresholds to this Project and its setting. If this distance limit is used to exclude the contribution of regionally or globally transported TACs to this Project's cumulative excess cancer risk, the EIR commits an error of law. Baseline risk cannot be arbitrarily reduced by this artifice. Also, the fact that pollutants from a particular source may attenuate with distance does not explain why the cumulative background cancer risk pollutants from all sources, including more distant sources, can be ignored in a cumulative analysis. CEQA requires consideration of all existing conditions in cumulative analysis. (*CBE v. Resources*, *supra*, 103 Cal.App.4th at 114; *Kings County*, *supra*, 221 Cal.App.3d at 718.)

G. The EIR's Visual Impacts Analysis Is Based on Errors of Law and Improperly Defers the Formulation of Mitigation Measures for Significant Visual Impacts[27]

1. The EIR's Analysis of Impacts AES-1 and AES-2 Omits Essential Information

The EIR divides its analysis of the CPHP's visual impacts into three types of impacts using three separate thresholds of significance: physical impacts on scenic vistas (AR 3719 [Impact AES-1]), "conflict with applicable zoning and other regulations governing scenic quality" (AR 3726 [Impact AES-2]), and "new sources of substantial light or glare which would adversely affect daytime or nighttime views" (AR 3741 [Impact AES-3].)

The EIR deploys these thresholds in a manner that excludes consideration of substantial evidence supporting a fair argument that visual impacts as perceived from surrounding neighborhoods may be significant. The EIR achieves this result by (1) artificially limiting its analysis of *physical* changes to the visual character of the area to impacts on scenic vistas (i.e., Impact AES-1) and (2) measuring the CPHP's conflict with applicable regulations governing visual impact against a legally erroneous baseline of future regulations.

[27] The issues in this section are exhausted at AR 5862-64; 5903-06; 5913-18; 6137-43.

Regarding Impact AES-2, the EIR identifies the "applicable regulations governing scenic quality" as UC's 2014 LRDP sub-objectives 1B and 1C, which provide, respectively, that the campus: "Acknowledge and respond to local zoning and height and bulk limitations to the extent possible" and "Design new buildings to be sensitive to the surrounding neighborhood and landscape, taking into account use, scale, potential noise generation, and density." (AR 3726.)

The EIR finds that the New Hospital, at 955,000 gross square feet, 16 stories tall, and 294 feet in height (AR 3668), would:

> contrast sharply both in height and scale with the existing residential development to the east, which is limited to 40 feet in height. The proposed New Hospital would also be nearly 100 feet taller than other existing buildings on the campus site (adjacent Moffitt Hospital is currently the tallest building at 197 feet). In addition, the proposed New Hospital would be a prominent newly visible feature in the viewsheds from nearby neighborhoods . . . . As such . . . the height and scale of the proposed New Hospital would be inconsistent with 2014 LRDP sub-objective 1C.

(AR 3731.) Having shown that the impact is significant, the EIR performs a neat trick by finding the impact less than significant because the CPHP would do away with the 2014 LRDP's regulations governing scenic quality with which it conflicts. The EIR states:

> To the extent the CPHP would be inconsistent with applicable 2014 LRDP objectives as described above, UCSF would seek amendments to the 2014 LRDP to bring the CPHP and 2014 LRDP into conformity. In particular, the 2014 LRDP would be amended clarify (sic) that sub-objectives 1B and 1C would not apply to the New Hospital project . . . ."

(AR 3737; see also AR 3727.) By this artifice, the EIR improperly considers the baseline to be the future project under the amended LRDP policy, rather than comparing the CPHP's environmental impact to current conditions. (*South Coast*, *supra*, 48 Cal.4th at 320-21; *Environmental Planning and Information Council v. County of El Dorado* (1982) 131 Cal.App.3d 350, 355.)

When this error is combined with the EIR's self-selected limitation on Impact AES-1 to only consider impacts on scenic vistas, the EIR commits the additional legal error of deploying its thresholds of significance to foreclose consideration of substantial evidence supporting a fair argument of significant impact. (*Ante*, *Visalia Retail*, *supra*, 20 Cal.App.5th at 13; *Amador Waterways*, *supra*, 116 Cal.App.4th at 1108–09.)

Here, a fair argument of significant impact is provided, not only by the EIR's analysis of Impact AES-2 (AR 3726-41), but by public comments from expert planners Terry Watt (AR 5903-06) and Jared Ikeda of Ikeda Consulting. (AR 5913-14). Mr. Ikeda opined that the proposed building under the CPHP, and particularly the sixteen-story New Hospital "would have significant visual impacts," providing visual simulations to show the extreme inconsistency with surrounding development. (AR 5913-14.) Mr. Ikeda described the New Hospital as the "dominant mass" in the neighborhood, that will "block views"

to Mount Sutro. (AR 5915.) He concluded that "the height and mass of the proposed new hospital will be highly visible as a new feature in the skyline from . . . public parks as well as from various other locations and streets within the surrounding neighborhoods." (AR 5917.) The New Hospital would also be visible from Golden Gate Park. (AR 5918.) Golden Gate Park is one block (400 feet) from campus. (AR 3644, 3699.)

In short, the EIR's analysis of Impacts AES-1 and AES-2 reveal a rabbit warren of legal errors that combine to omit an essential analysis of the CPHP's physical impacts on the area's visual quality as seen from the surrounding neighborhood, requiring revision of the DEIR.

2. UC Erroneously Claims That It Is Exempt from Considering Visual Impacts Pursuant to Public Resources Code Section 21099

The EIR claims, based on section 21099 subdivision (d), that it need not analyze visual impacts and that the analysis that is provided is solely for informational purposes. (AR 3715-16; 3691-92; 5766.) That is incorrect. The CPHP does not qualify for exemption from CEQA's requirements to assess visual impacts. "The scope of an exemption may be analyzed as a question of statutory interpretation and thus subject to independent review." (*Covina Residents for Responsible Development v. City of Covina* (2018) 21 Cal.App.5th 712, 724.) Courts review exemptions narrowly. (*San Lorenzo Valley Community Advocates for Responsible Education v. San Lorenzo Valley Unified School Dist.* (2006) 139 Cal.App. 4th 1356, 1382; *Mountain Lion Foundation v. Fish and Game Commission* (1997) 16 Cal.4th 105, 125 (*Mountain Lion Foundation*.)

Section 21099, subdivision (d)(1) states that "[a]esthetic and parking impacts of a residential, mixed use-residential, or employment center project on an infill site located within a transit priority area shall not be considered significant impacts on the environment." The EIR contends the CPHP "substantially meets the definition of an employment center as the campus site includes a variety of commercial uses." (AR 3692.) But the exemption narrowly defines an "employment center project" as "a project located on property zoned for commercial uses." (§ 21099 (a)(1).) To the extent the campus has any zoning classification, it is partially zoned by the City as "(Public) Zoning District" and "Residential House District, Two-Family (RH-2)." (AR 4082.) It is not zoned for "commercial use."

In responses to comments, the FEIR argues that pursuant to its "constitutional autonomy, development and uses on property owned or leased by the University that are in furtherance of the University's educational purposes are not subject to local land use regulation, including those of the City of San Francisco." (AR 5765.) Assuming this is true, it is not relevant to whether the campus meets the statutory requirement of being zoned for commercial uses. It is either zoned for "(Public) Zoning

District" and "Residential House District, Two-Family (RH-2)" or it is not zoned at all.[28]

The FEIR also presents a new argument that the CPHP is a "residential" or "mixed-use residential" project because it "proposes substantial new on-campus housing, consisting of 772 net new housing units." (AR 5765-66.) These characterizations are incorrect as a matter of law. While section 21099 does not define "residential" or "mixed-use residential" projects, another closely-related section of CEQA does. Section 21159.28 subdivision (d) defines a "residential or mixed-use residential project" as one "where at least 75 percent of the total building square footage . . . consists of residential use or a . . . transit priority project as defined in Section 21155." "Transit priority projects" are defined as containing "at least 50 percent residential use, based on total building square footage." (§ 21155.)

The CPHP proposes 915,300 square feet of housing out of total proposed development of over five million square feet. (AR 3684.) Thus, housing represents less than 20% of the CPHP development footprint, not nearly enough to qualify it as a "residential" or "mixed-use residential" project under CEQA's limited exemptions for housing projects. (*Berkeley Hillside Preservation v. City of Berkeley* (2015) 60 Cal.4th 1086, 1099-1100 ["statutes must be read in the context of "the entire scheme of law of which it is part so that the whole may be harmonized and retain effectiveness"].)

The CPHP is not within the scope of section 21099 and requires EIR analysis of visual impacts.

H. The EIR Improperly Defers the Formulation of Mitigation Measures for Significant Biological and Visual Impacts

In its analysis of biological Impact BIO-2, the EIR finds significant wildlife impacts from increased bird strikes due to light and glare associated with higher buildings, particularly the New Hospital adjacent to the Mount Sutro Reserve; and that the adoption of Mitigation Measure BIO-2b (MM BIO-2b) would reduce this impact to less than significant. (AR 3870-71.) In its analysis of aesthetic Impact AES-3, the EIR finds the CPHP would create new sources of substantial light or glare which would significantly and adversely affect daytime or nighttime views in the area, and that the adoption of Mitigation Measure AES-3 (MM AES-3) would reduce this impact to less than significant.

Both MM BIO-2b and MM AES-3 improperly defer the formulation of specific mitigation measures until after project approval. MM BIO-2b provides:

> ***Minimize*** light and glare resulting from new buildings through the orientation of the building, use of landscaping materials and choice of primary façade materials. Design standards and guidelines to minimize light and glare shall be adopted for the new buildings, including: reflective metal walls and mirrored glass walls shall not be used as primary building materials for facades.

(AR 3871.) As biologist Dr. Shawn Smallwood stated in his comments on the DEIR, the proposed

[28] UC does not dispute that it must comply with CEQA before approving the CPHP.

mitigation does not reduce the impact to a less-than-significant level, the choice of materials has been deferred, and the measure does not establish "performance standards." (AR 5938-39; 5868-69.) The "design standards and guidelines to minimize light and glare" are also deferred and are not linked to any performance standards.

MM AES-3 provides:

> Light and glare from buildings ***shall be minimized*** through the orientation of the building, use of landscaping materials and choice of primary facade materials. Design standards and ***guidelines to minimize light and glare shall be adopted*** for new buildings, including:
>
> - Reflective metal walls and mirrored glass walls shall not be used as ***primary*** building materials for facades.
> - Installation of illuminated building signage ***shall strive*** to be consistent with UCSF design guidelines and/or City Planning Code sign standards for illumination. . ..
> - Design parking structure lighting to ***minimize*** off-site glare.

(AR 3742) This measure improperly defers the formulation of actual mitigations because it does not establish performance standards against which future planners or the public can judge whether the impact is reduced to less than significant. The terms "minimize," "primary," and "strive" are too vague to be enforceable. (See case law discussion *ante*).

I. The EIR Fails to Assess the Project's Shadow Impacts on Surrounding Neighborhoods

Shadow impacts from the huge CPHP buildings are of major concern. UC prejudicially abused its discretion because the EIR was required, but failed, to analyze the impact of new shadows on the surrounding neighborhood. The EIR restricted its analysis of new shadows to three city parks; to wit, Golden Gate, Richard Gamble Memorial, and Gratton. (AR 1597-1624; 3759, 3771.) The FEIR's Master Response concedes that new shadow is considered significant only if it "substantially and adversely affect[s] the use and enjoyment of publicly accessible open spaces. (AR 5779.) Commentors objected to the Draft EIR's failure to analyze the significance of new shadows on surrounding neighborhoods, including those created by the proposed 16-story New Hospital. Comments presented substantial evidence supporting a fair argument that such new shadows may have significant impacts. (AR 5775; 5864; 5906; 5917-18; 6311, 6313, 6401, 6443, 6509-10.)[29]

[29] "As currently envisioned, the proposed New Hospital would be 16 stories and up to 294 feet in height. Although the building has not yet been designed, the 16-story building would exceed the City's height limits for the portions of the project site within the 65-D and 220-F Height and Bulk Districts. As for any portion of the New Hospital that would be located within the Open Space Height and Bulk District, although General Plan policies discourage the placement of buildings or additions within this district." (AR 4091.) UC is "exempt from local zoning whenever using property under its control in furtherance of its educational mission." (*Ibid*.)

Planner Jared Ikeda commented on the lack of analysis of shadow impacts on public places outside of parklands. (AR 5863, 5912, 5917-18.) Based on the DEIR's Shadow Study Appendix (AR 3749-63.), Mr. Ikeda observed that the increased height of the proposed New Hospital, Milberry Terrace, and Irving Street Gateway projects "will further increase the time and frequency" of shadows cast throughout the year on public sidewalks and streets along Parnassus Avenue and Irving Street frequented by pedestrians. (AR 5917.) Mr. Ikeda also observed that shadows "affect the direct exposure to sun radiation and the resulting feeling of warmth to a person's body;" that "sun radiation can affect the temperature of a surface struck by sunlight and increase that temperature and its surroundings;" and that "[t]he comfort and attractiveness of these particular areas to pedestrians and passersby may be adversely affected and should be addressed in the EIR." (AR 5917.)

The EIR's refusal to analyze the significance of shadow impacts on neighborhood life outside of city parks, when presented with substantial evidence supporting a fair argument that such impacts may be significant, renders it inadequate. (See *ante*.) The EIR cannot use a self-selected threshold of significance to ignore a fair argument of significant impact. (*Amador Waterways, supra*, 116 Cal.App.4th at 1109 ["a threshold of significance cannot be applied in a way that would foreclose the consideration of other substantial evidence tending to show the environmental effect to which the threshold relates might be significant."].)

The FEIR's response to comments also summarizes what the DEIR's shadow study shows regarding the timing and extent of new shadows. (AR 5779 [2nd full ¶].) But, like the DEIR, the FEIR fails to determine the significance of this impact. (*Amador Waterways, supra*, 116 Cal.App.4th at 1111-12 ["The question the Agency had to answer was whether the reduction of the surface flow in the streams constituted a significant environmental effect."].)

The CPHP EIR failed to adequately address shadow impacts, in multiple respects.

J. The EIR Improperly Deferred the Formulation of Mitigation for Significant Wind Impacts[30]

The New Hospital, sixteen stories tall and over 294 feet high, would be the tallest building in the vicinity of the Parnassus campus. (AR 3731, 3668.) The EIR concludes that wind is already "uncomfortable" on Parnassus Avenue near the existing Moffitt-Long Hospital and Medical Building 1: "Winds that approach the campus from the southwest through the northwest tend to be accelerated as they flow between Mount Sutro and the taller campus buildings along the south side of Parnassus Avenue, as well as along Parnassus Avenue between taller campus buildings to either side of the street." (AR 3708.) The EIR concluded that wind impacts in the vicinity of the proposed New Hospital and

[30] This issue was exhausted in public comments at AR 1014-1016; 1021-1112.

other buildings would exceed the comfort criterion for pedestrians and would be "significant and unavoidable with mitigation." (AR 3743-46.)

The EIR identifies (and the Findings adopt) Mitigation Measure AES-4 to reduce the significant impact. However, MM AES-4 defers the formulation of specific mitigation measures to future analyses when specific building designs become available:

> CPHP Mitigation Measure AES-4 would require that wind-tunnel testing of specific building designs for structures 80 feet tall or greater be implemented to reduce wind impacts as feasible. However, in the absence of wind tunnel testing of specific building designs, it cannot be concluded that effects would be reduced to a less than significant level. Therefore, this impact would be significant and unavoidable with mitigation.

(AR 3744; see also 145-146, 3743, 4092.)

As discussed, to defer mitigation until after project approval it must be impracticable to achieve in the present and the agency must adopt performance standards. UC violates both criteria for deferral.

1. The EIR's Implied Finding That It Is Impractical to Formulate Specific Mitigation Measures Before Approval Is Not Supported by Substantial Evidence

The EIR states that wind impacts require computational analysis, which it includes, and an "individual point-based analysis undertaken in a wind tunnel," which it asserts cannot occur without final building designs:

> The computational analysis provides information regarding wind flows over the entire site, unlike the individual point-based analysis undertaken in a wind tunnel, and thus is able to reliably predict wind comfort conditions across a relatively wide area, such as the Parnassus Heights campus site. Computational wind engineering does not, however, account for turbulence (variation in wind speed and direction) in the same manner as does wind-tunnel testing, which is more appropriate for evaluation of actual specific designs of tall buildings. Moreover, computational analysis cannot identify exceedances of the wind hazard criterion due to its inability to reliably simulate turbulence using currently accepted methods.

(AR 3717.) On such basis, the EIR defers final analysis of the significance of wind impacts caused by the New Hospital, the Irving Street Arrival, Research and Academic Building ("RAB") and the Initial Aldea Housing Densification. (AR 3774, 3745.) It also defers the formulation of specific mitigation measures for those buildings until final designs are completed and subjected to wind-tunnel testing. (AR 3744, 3746.) The FEIR comment response is that "precise evaluation of a building's wind effects can only be undertaken in a wind-tunnel analysis, and because such an analysis provides useful information only when an actual specific building design is evaluated, *it is not possible* to provide more detail regarding potential wind impacts and potential mitigation measures . . . (AR 5773, italics added.)

Assuming, *arguendo*, that the absence of final designs precludes final wind-tunnel testing, the FEIR fails to explain or provide substantial evidence that it is impractical to complete final designs

before approval of the CPHP and to conduct the necessary wind tunnel testing to enable this EIR to analyze wind impacts and evaluate mitigations or alternative designs *before approval*.[31]

Moreover, relevant EIR evidence points in the opposite direction. The approximate mass and size of the buildings, including the New Hospital, are already known and modeled. (AR 3663.)[32] UC designed the New Hospital during the preparation of the EIR and consideration of the CPHP, noting that "sufficient detail will be available to publish a project-level Draft EIR for the New Hospital in the summer of 2021." (AR 3585.) An architectural firm prepared the CPHP and produced a visual rendering of the new buildings, after which UC hired another architect for the New Hospital in July 2020. (AR 1133; 1137-43; 1154-59.)[33] There is no substantial evidence that it would be impractical to complete building designs and conduct wind tunnel testing before EIR certification and project approval. UC's deferral of formulation of specific mitigation measures was a prejudicial abuse of discretion.

2. UC's Mitigation Fails to Require Compliance with Specific Performance Standards

MM AES-4 identifies a specific performance criterion: new exceedance(s) of the City's 26-mph pedestrian wind hazard criterion, *but it does not require that it be met*. (AR 3744.) UC merely promises that "UCSF shall work with the wind consultant to identify feasible mitigation strategies, including design changes (e.g., setbacks, rounded/chamfered building corners, stepped facades, etc.), to eliminate or reduce wind hazards to the maximum feasible extent." (AR 3744.) It does not set a performance standard by which these mitigation measures would be measured nor commit UCSF to a course of action. This does not satisfy the mandates of CEQA. (*Ante*; Guidelines, § 15126.4 (a)(1)(B).)

The error is prejudicial because UC finds the CPHP's future wind impacts to be "significant and unavoidable." (AR 144-47.) This finding requires that UC impose feasible mitigation measures that would substantially reduce the impact or reduce it to less than significant. (§ 21081 (a)(3); Guidelines, § 15091 (a)(3).) UC chose to defer design-specific analysis of wind impacts until after approval, and thus it is also its choice that no mitigation measure is ready to approve.

Also, UC's refusal to conduct design-specific analysis before approval means that its statement of overriding considerations based on Project benefits outweighing significant environmental effects

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[31] "Where there are impacts that cannot be alleviated without imposing an alternative design, their implications and the reasons why the project is being proposed, notwithstanding their effect, should be described." (Guidelines, § 15126.2(c).)

[32] "The preliminary concept for the New Hospital consists of a 5-story podium, above which an 11-story tower would rise." (AR 3668.)

[33] SF submitted additional detailed literature regarding specific design features to reduce pedestrian wind impacts, including the use of building features, massing, rounded corners, orientation of building in relation to wind, and consideration of terrain, and including information about how "podium designs" affect wind. (AR 1021-1112; 1095-1098; 1105-1111.)

was adopted without adequate basis, because neither UC nor the public know the severity of the significant effect. (*County of Fresno*, *supra*, 6 Cal.5th at 519 ["a sufficient discussion of significant impacts requires not merely a determination of whether an impact is significant, but some effort to explain the nature and magnitude of the impact"].)

Finally, MM AES-4 requires the use of an incorrect baseline to determine the success of the mitigations. The mitigation requires comparison of the "wind hazard exceedance or the number of test points subject to hazardous winds, compared to then-existing conditions . . . ." (AR 3744.) The proper baseline is the present, not future environmental conditions. (*South Coast*, *supra*, 48 Cal.4th at 320-321.)

K. The EIR Fails to Lawfully Analyze and Mitigate GHG Emissions

Implementation of the CPHP would increase electricity consumption at the Parnassus Heights campus by 116 percent, natural gas would be increased by 61 percent, diesel would be increased by 71 percent, and gasoline would be increased by 22 percent. (AR 1779.) These drastic increases in energy consumption would, in turn, significantly increase GHG emissions at the Parnassus campus. The EIR's analysis and mitigation for these GHG emission violates CEQA. UC's strategy to primarily rely on purchasing voluntary market offsets results in both unenforceable and improperly deferred mitigation. UC also improperly relies on the inapplicable 2017 Scoping Plan to establish a significance standard.

1. The EIR Relies on Unenforceable Mitigation

CEQA requires a lead agency to consider the "extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions[.]" (Guidelines, § 15064.4 (b)(3).) One of the EIR's significance criteria for GHG emissions is whether the CPHP would "generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment." (AR 1851.) The DEIR stated that the criterion would be potentially surpassed, because "the CPHP would result in a significant impact on the environment if GHG emissions from construction and operations of the Parnassus Heights campus site would exceed a threshold of zero net additional GHG emissions compared to the existing conditions, currently estimated below to be 125,426 MT CO2e annually for all Scope 1, Scope 2, and Scope 3 sources[.]" (AR 1852.)

To decrease the GHG emissions to less than significant (i.e., less than net-zero), the EIR relies on Mitigation GHG-1c. (AR 1855.) GHG-1c is divided into two parts, "Compliance with CARB's Cap and Trade Program" and "Compliance with UC Policy." (AR 1858.) There are two critical distinctions between the parts. Compliance with CARB's cap and trade program requires offset credits to be registered and retired by an Offset Project Registry pursuant to 17 California Code of Regulations section 95802 subdivision (a). However, these offsets may only be applied to UCSF's Central Utility

Plant ("CUP") because it is the only aspect of the CPHP that is a "Covered Entity" (AR 1834) – and then only up to a maximum of eight percent of UC's cap and trade program compliance obligation (AR 6128.) For the remainder of its compliance obligation, UC proposes to "utilize *the voluntary carbon market* to offset the remainder of the emissions from the CPHP that are above the project significance criterion*."* (AR 6128, italics added; 1858.)

The EIR concedes the eight percent maximum decrease under the cap-and-trade program is insufficient to meet its net-zero increase standard. (AR 1854.) In 2018, UCSF Parnassus produced 125,426 MT CO_2e of emissions. (*Ibid*.) Implementing the CPHP would increase emissions to 187,241 MT CO_2e, which is an increase of 61,815 MT CO_2e. (*Ibid*.) An eight percent decrease from the CUP would be insufficient to cover this increase and so, to avoid a significant impact determination, UC relies on the purchase of offsets *in a voluntary market* for all other CPHP emissions (equal to roughly 59,000 MT CO_2e a year). (AR 1855.)

The legal problem, however, is that these voluntary market offsets do not meet the same enforceability standard as CARB's cap and trade program (i.e., "real, permanent, verifiable, additional, and enforceable") and, therefore, are not "fully enforceable through permit conditions, agreements, or other legally binding instruments" as required by CEQA. (Guidelines, § 15126.4 (a)(2); see *Golden Door II*, *supra*, 50 Cal.App.5th at 506-514 [offset-based GHG mitigation violated CEQA because unenforceable].) In *Golden Door II,* as here, the agency's proposed offsets did not meet the protocols of the CARB cap-and-trade program designed to ensure that they are "real, permanent, verifiable, additional, and enforceable." (*Id*., *supra,* 50 Cal.App.5th at 511.) The CPHP's mitigation here, M-GHG-1c, uses nearly identical language as the mitigation in *Golden Door II.* (Compare AR 1859 to 50 Cal.App.5th at 511.) *Golden Door II* held that voluntary market offsets did not meet CEQA's enforceability requirement for mitigation because "M-GHG- does not require the protocol itself to be consistent with CARB requirements." (*Golden Door II*, *supra,* 50 Cal.App.5th at 506, 512.) The same is true here. (AR 1859 ["The protocols of each registry . . . shall be used"].)

2. The EIR Impermissibly Defers Mitigation for GHG Emissions

As discussed above, "Deferred mitigation violates CEQA if it lacks performance standards to ensure the mitigation goal will be achieved." (*Golden Door II*, *supra*, 50 Cal.App.5th at 520; Guidelines, § 15126.4 (a)(1)(B).) In *Golden Door II*, the court found the relevant offset mitigation impermissibly deferred because the county's planning and development director determined whether to approve offsets, without applying objective criteria. (*Golden Door II*, *supra*, 50 Cal.App.5th at 519.) UC's mitigation strategy is analogous and therefore dictates the same outcome here. *Golden Door II* determined that "M-GHG-1 sets a generalized goal — no net increase or net zero GHG emissions . . .

achieving that goal depends on implementing undefined offset protocols, occurring in unspecified locations (including foreign countries), the specifics of which are deferred to those meeting one person's subjective satisfaction." (*Id*., *supra*, 50 Cal.App.5th at 520.) The only differences here are that (1) UC limits offsets to unspecified locations within the United States and (2) instead of a single person's subjective satisfaction it is UC's unspecified "internal guidelines" and "internal screens" that must be satisfied. (AR 1858.) Neither difference compels a different outcome.

With respect to the location of offsets, *Golden Door II* held that M-GHG-1 did not contain objective standards as to whether any specific offset project would be "available" or "financially feasible" in one location or another. (*Golden Door II*, *supra*, 50 Cal.App.5th at 520-21.) UC follows the same approach here by allowing a large portion of CPHP emissions to be "mitigated" by purchasing offsets. (AR 1854.) Rather than determine the locations and protocols of these offsets at the time of the EIR, UC has deferred these determinations.

Further, *Golden Door II* found the agency's criteria for determining whether an offset would be "real, permanent, verifiable and enforceable," was not sufficiently objective. (*Golden Door II*, *supra*, 50 Cal.App.5th at 521.) UC's mitigation also lacks the objective criteria, as the "protocols of each registry, and *UC own internal screens*, shall be used to demonstrate that the carbon offset credits provided are real, permanent, additional, and have been independently verified as adhering to its applicable project protocols." (AR 1859, italics added.) The EIR provides no information about what these "internal screens" are, who is responsible for defining them, or whether the screens would provide offsets that are real, permanent, additional, and independently verified. (*Ibid*.) Without additional information, decision-makers and the public are left in the dark as to whether GHG-1c contains adequate, or any, performance standards. As in *Golden Door II*, GHG-1c is impermissibly deferred.

3. CARB's 2017 Scoping Plan Is Inapplicable by Its Own Terms to UC and Cannot Be Used to Reduce UC's Duty to Mitigate GHG Impacts

One of the EIR's thresholds of significance for GHG emissions asks: "Would implementation of the CPHP . . . Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases." (AR 1851.) In 2017, UCSF developed a combined Climate Action Plan and GHG Reduction Strategy ("GHGRS") "to provide streamlined analysis under CEQA for future development projects" (AR 1845-46) and to ensure that UCSF can answer 'no' to the above-stated questions (AR 1851). The GHGRS is also intended to ensure that UCSF is consistent with the state's GHG emission reduction targets for 2030 and 2050. (AR 1846; 1851.) Through legislation and executive orders, California has set the following emissions targets: by 2030, reduce GHG missions to 40 percent below 1990 levels; and by 2050, reduce GHG emissions to 80 percent below 1990 levels.

(AR 1830-31.) (See e.g., (*Cleveland I;* 3 Cal.5th at 428; *Newhall Ranch I, supra,* 62 Cal.4th at 221; *Spring Valley Lake, supra,* 248 Cal.App.4th at 101; *Sierra Club v. County of San Diego* (2014) 231 Cal.App.4th 1152, 1168; *Citizens for Responsible Equitable Environmental Development v. City of Chula Vista* (2011) 197 Cal.App.4th 327, 335-36.)

The EIR, however, in selecting the standard for determining whether its "conflict with applicable plan" threshold is triggered, abandons UCSF's own "applicable" GHGRS and instead uses the "inapplicable" CARB 2017 Scoping Plan Update, which guides cities and counties to use a "zero net increase" significance standard for GHG emissions. (AR 1852, 26981.) But UCSF is not a city or county, and so the CARB 2017 Scoping Plan guidance is inapplicable by its own terms, and the EIR fails to substantively explain how such guidance is applicable to a statewide entity like UC. As the EIR explains, "UCSF is a constitutionally created state entity," and therefore not a city, county or local government. (AR 1741.) As such, guidance to cities and counties regarding review and approval of private development projects within their respective jurisdictions simply has no application to UC's management of its own development proposals on its own property, over which UC has plenary authority.

In short, the EIR says it will use "conflict with an applicable plan, policy, or regulation" as a threshold of significance, but then selects a patently inapplicable plan to use in the analysis. This is a legal error. Further, this error is prejudicial because using a "net zero" significance standard reduces UC's mitigation obligation as compared to using a significance standard tied to the state's 2030 and 2050 GHG reduction goals.

L. The EIR Fails to Adequately Assess Whether Significant Increases in Energy Consumption are Wasteful, Inefficient or Unnecessary

1. UC May Not Uncritical Rely on Title 24 and LEED Certification

The CEQA Guidelines require lead agencies to prepare a substantive analysis of a project's energy impacts and provides in relevant part:

> Energy Impacts. If analysis of the project's energy use reveals that the project may result in significant environmental effects due to *wasteful, inefficient, or unnecessary use of energy, or wasteful use of energy resources, the EIR shall mitigate that energy use.* This analysis should include the project's energy use for all project phases and components, including transportation-related energy, during construction and operation. *In addition to building code compliance, other relevant considerations may include, among others, the project's size, location, orientation, equipment use and any renewable energy features* that could be incorporated into the project.

(Guidelines, § 15126.2 (b), italics added.)

An EIR must affirmatively analyze a project's use and efficiency to determine whether there is "wasteful, inefficient, or unnecessary use of energy." Here, the EIR's perfunctory analysis of energy

falls well short of these mandates. There are two interrelated but distinct defects in the EIR's analysis of energy impacts. First, the EIR disregards Appendix F energy conservation factors. Second, the analysis relies heavily on compliance with Title 24 and LEED standards but otherwise fails to consider other relevant considerations of Guidelines section 15126.2, subdivision (b).

The EIR purports to analyze the considerations set forth in CEQA Guidelines, Appendix F, yet completely overlooks the introduction of Appendix F, which states:

> The goal of conserving energy implies the wise and efficient use of energy. The means of achieving this goal include:
> a. decreasing overall per capita energy consumption,
> b. decreasing reliance on fossil fuels such as coal, natural gas and oil, and
> c. increasing reliance on renewable energy resources.

(Guidelines, Appendix F.)

The EIR makes no effort to demonstrate that the CPHP employs these specifically-identified "means" to achieve the stated goal of conserving energy. The most glaring conflict comes from a paragraph titled "Appendix F.II.C.1: Energy Requirements and Energy Use Efficiencies" of the EIR, which points the reader to Tables 4.5-2 and 4.5-3 for estimated energy usage. (AR 1779.) Table 4.5-2 discloses that electricity use would increase from 5,091 to 10,976 MWh/year, natural gas use would increase from 1,044,485 to 1,686,549 MMBtu/year, diesel use would increase from 681,823 to 1,198,763 gallons per year, and even gasoline use would increase from 4,246,449 to 5,178,022 gallons per year. (*Ibid*.) These numbers translate to a 116 percent increase in electricity use, 61 percent increase in natural gas use, 76 percent increase in diesel use and 22 percent increase in gasoline use. (*Ibid*.)

With respect to the three different "means" of achieving energy conservation, the EIR discloses that UCSF would dramatically increase its reliance on fossil fuels rather than "decreasing reliance." Further, the EIR's energy chapter does not break down energy use per capita so there is no evidence whether this is met. Last, the EIR is unclear whether renewable energy sources would be implemented into the CPHP, and this is particularly troublesome given "[t]he CUP currently supplies a substantial majority (98 percent) of the electricity service to the Parnassus Heights campus site by means of gas and steam turbine generators." (AR 1767.) Therefore, there is no indication that any of the identified means to achieve the goal of energy conservation are being met other than through reliance on compliance with Title 24 and LEED standards.

Though the EIR provides energy consumption data, the dramatic increases easily overcome the low threshold of whether the Project "may" result in wasteful, inefficient, or unnecessary use of energy, or wasteful use of energy resources. (Guidelines, § 15126.2 (b).) Put simply, the Project's proposed

increases in energy consumption imposes upon UC the duty to analyze in the EIR whether such consumption is "wasteful, inefficient or unnecessary." The EIR fails at this task.

The EIR's determination that energy impacts would be less than significant is based entirely on the Project's compliance with UC's Sustainable Practices Policy provisions "that are designed to conserve and reduce energy consumption," which in turn are premised on Title 24 and LEED compliance. (AR 1774, 1777.) However, both the CEQA Guidelines and applicable case law require more. Guidelines section 15126.2, subdivision (b) expressly requires, "In addition to building code compliance, other relevant considerations may include, among others, the project's size, location, orientation, equipment use and any renewable energy features that could be incorporated into the project." In *CCEC, supra*, 225 Cal.App.4th at 211, the court determined that requiring "compliance with Title 24 of the California Code of Regulations and other California green building codes did not meet the requirements of appendix F of the CEQA Guidelines." The court explains that such compliance

> . . . does not address many of the considerations required under appendix F of the CEQA Guidelines. These considerations include whether a building should be constructed at all, how large it should be, where it should be located, whether it should incorporate renewable energy resources, or anything else external to the building's envelope. Here, a requirement that [the project] comply with the Building Code does not, by itself, constitute an adequate assessment of mitigation measures that can be taken to address the energy impacts during construction and operation of the project.

(*Ibid*.) In *Ukiah Citizens for Safety First v. City of Ukiah* (2016) 248 Cal.App.4th 256, 265, the court relied on the *CCEC* court's analysis to conclude that the respondent city's EIR "improperly relies on compliance with the building code to mitigate operational and construction energy impacts, without further discussion of the CEQA Guidelines, Appendix F criteria."

Here, the EIR states that all "[i]ndividual projects under the proposed CPHP would be required to comply with the UC Policy on Sustainable Practices, which requires new construction of facilities to meet a minimum standard of LEED-NC Silver and strive for LEED-NC Gold when possible and requires 20 percent better energy performance than Title 24[.]" (AR 1786.) UC asserts, "UCSF has committed to implement the energy reduction measures within its GHGRS as part of the LRDP and the CPHP to improve efficiency of existing buildings, including the requirement that new buildings be designed to surpass Title 24 energy efficiency standards and . . . attain LEED 'Silver' certification or equivalent." (AR 5988.) Based on this conclusory analysis, the EIR determined the CPHP would not result in wasteful, inefficient, or unnecessary consumption of fuel or energy. (AR 5988.)

UC's reliance on LEED certification fails because, as in *CCEC*, it fails to consider "whether a building should be constructed at all, how large it should be, where it should be located, whether it should incorporate renewable energy resources, or anything else external to the building's envelope."

(*CCEC, supra*, 225 Cal.App.4th at 21.) The EIR never explains whether the scope of LEED certification includes consideration of these issues.[34] Even if LEED certification accounted for such considerations, reliance on LEED certification also fails because the UC's Policy on Sustainable Practices, which the EIR identifies as the ultimate legal authority imposing the requirement for LEED Silver certification,[35] includes an express waiver procedure for LEED certification. (AR 33958 ["Any proposed waiver from section III.A of the Policy may be requested administratively from the UCOP Executive Director of Capital Programs prior to first project approval"].)

The EIR fails to analyze whether the Project's significant increase in energy consumption is wasteful, inefficient or unnecessary. Further, UC may not sidestep this required analysis by pointing to Title 24 or LEED certification.

2. UC Relies on the Ratio Theory to Avoid Adequate Analysis of Cumulative Energy Impacts

The EIR finds the CPHP would not result in cumulatively considerable impacts from wasteful, inefficient, or unnecessary energy consumption. (AR 1788.) To arrive at this conclusion, the EIR impermissibly relies on the long-repudiated "ratio theory." (See *ante*.) The EIR repeatedly emphasizes that the CPHP would account for a miniscule amount of energy use across the state or the City (AR 1781-83), however, this "drop in the bucket" analysis is being used to circumvent analysis of whether the project's energy consumption is cumulatively "wasteful, inefficient, or unnecessary." (Guidelines, § 15126.2 (b); AR 1787 ["Given the relatively small percentage of the CPHP's other fuel and energy uses compared to existing fuel and energy use in the region"].) Reliance on the "ratio theory" is improper.

Setting aside the EIR's reliance on the ratio theory, the cumulative analysis is defective also because it identifies no significance criteria for the cumulative impacts. (AR 1787.) The EIR's analysis relies heavily on Title 24 and LEED to show "efficiencies," but does not analyze the cumulative impact against any identifiable significance standard. (AR 1787; *Lotus, supra*, 223 Cal.App.4th 645, 657 ["Simply stating that there will be no significant impacts because the project incorporates 'special construction techniques' is not adequate or permissible" to meet CEQA requirements.].) Rather than analyze how the Project's large increase in energy consumption could contribute to a cumulative impact, the EIR instead concludes, "[O]perational electricity requirements of the CPHP would not be cumulatively considerable and the estimated consumption rate would not be substantial compared to the 2018 citywide consumption." (AR 1787.) What this fails to determine, for example, is whether doubling

[34] The most detailed description of LEED certification is buried in the administrative record, and characterizes LEED as "a green building rating system" and identifies four levels: Certified, Silver, Gold and Platinum. (AR 33941.)

[35] The revised LRDP accommodating the CPHP states, "The Sustainable Practices Policy sets the following additional requirements and goals relevant to GHG emissions reduction." (AR 48.)

the site's use of electricity would affect the local grid or whether an additional 642,064 MMBTU of natural gas a year would be cumulatively considerable. (AR 1779.)

In summary, the EIR fails as an informational document with respect to the Project's project-level and cumulative analysis as to whether the proposed dramatic increases in energy consumption are inefficient, wasteful or unnecessary.

M. The EIR Fails to Analyze Off-Site Alternatives

CEQA's mandates are enforced vis-à-vis project alternatives and mitigation measures. The Supreme Court set aside the EIR certified in *Banning Ranch Conservancy v. City of Newport Beach* (2017) 2 Cal.5th 918, 937 based on the city's failure to "meaningfully address feasible alternatives or mitigation measures." The Court rejected a flawed EIR for the expansive Newhall Ranch project following multiple EIRs spanning a decade. (*Newhall Ranch I, supra*, 62 Cal.4th 204.) Justice Kathryn Werdegar's majority opinion, noting Justice Ming Chin's dissent warning of "inordinate delay" attending an additional CEQA process, underscored that judicial review of an EIR cannot turn on

> ... independent assessment of the project's environmental merits. Even if Newhall Ranch offered the environmentally best means of housing this part of California's growing population, CEQA's requirements for informing the public and decision makers of adverse impacts, *and for imposition of valid, feasible mitigation measures,* would still have to be enforced.

(*Id.* at 240, italics added.)

1. Alternatives Enforce CEQA's Substantive Mandate

Public Resources Code section 21002 lays out the state policy that "agencies should not approve projects as proposed if there are feasible alternatives . . . that would substantially lessen their significant environmental effects." The same code section explains that environmental processes — in this case, an EIR — are practical: they are "*intended to assist public agencies*" in evaluating impacts and identifying alternatives. (§ 21002, italics added; *see* § 21002.1 (a).)

Consistent with this premise, the Supreme Court held in *City of Marina* that CEQA requires agencies "to avoid or mitigate, if feasible, the significant environmental effects of their project." (*City of Marina, supra*, 39 Cal.4th at 369; see also *Preservation Action, supra*, 141 Cal.App.4th at 1350 ["agencies should not approve projects as proposed if there are feasible alternatives . . . which would substantially lessen the significant environmental effects . . . ")

CEQA's "substantive mandate" is further implemented in section 21081, and *does not allow an agency to approve a project with significant impacts for which there are feasible alternatives.* (*Mountain Lion Foundation, supra*, 16 Cal.4th at 123, 134.) A further relevant mandate, applicable only *after* feasible mitigations and alternatives have been adopted, is that projects can be approved despite

significant impacts when specific "economic, social, or other conditions" — factors *external* to the project itself — make mitigation infeasible. (§§ 21002, 21002.1.)

To approve a project with significant environmental impacts, UC therefore must first impose project alternatives and mitigation measures found to be feasible — enforcing CEQA's substantive mandate — and then, if significant impacts remain, adopt a supportable finding of overriding public benefit. (§ 21081; *City of Marina, supra,* 39 Cal.4th at 350.) The findings must be made in order, and while both must be fact-based, the Legislature reserved policy considerations for the latter. (*Ibid.*)

2. EIRs Must Analyze Potentially Feasible Alternatives that Reduce Project Impacts

CEQA requires that lead agencies consider alternatives at two stages in the EIR process. First, a draft EIR must analyze a range of reasonable alternatives. (Guidelines, § 15126.6.) Later, when the agency considers whether to approve or carry out the project as proposed, it cannot do so if a feasible alternative would substantially reduce significant effects. (Guidelines, § 15092 (b)(2)(A).)

To explore ways to meet as many goals as possible while protecting the environment, EIRs thus must evaluate alternatives that accomplish "most" basic objectives. (Guidelines, § 15126.6 (a); *Preservation Action, supra,* 141 Cal.App.4th at 1353.) Alternatives warrant study in the EIR process if they can reduce or avoid impacts and are "potentially feasible." (Guidelines, §§ 15126.6 (a), (c) , (f); *Watsonville Pilots Association v City of Watsonville* (2010) 183 Cal.App.4th 1059, 1087 (*Watsonville Pilots*).) As to whether an EIR has evaluated a range of reasonable alternatives, "[e]ach case must be evaluated on its facts ... in light of the statutory purpose." (*Watsonville Pilots, supra,* 183 Cal.App.4th at 1086, citing *Citizens of Goleta v. Board of Supervisors of Santa Barbara County et al.* (1990) 52 Cal.3d 553, 566 (*Goleta II*).) The nature and scope of the alternatives to be studied are governed by the rule of reason. (Guidelines, § 15126.6 (a); *In re Bay-Delta Programmatic Environmental Impact Report Coordinated Proceedings* (2008) 43 Cal. 4th 1143, 1163 (*In re Bay-Delta*).)

CEQA defines feasible: "capable of being accomplished in a successful manner within a reasonable . . . time, taking into account economic, environmental, social, and technological factors." (§ 21061.) External factors — "legal, social, . . . or other considerations, including considerations for the employment opportunities for highly-trained workers" — may also be relevant. (§ 21081 (a)(3).) Feasible alternatives are allowed to "impede to some degree the attainment of the project objectives, or . . . be more costly." (Guidelines, § 15126.6 (b).)

Finally, an "alternative that is potentially feasible should not be excluded from an EIR simply because it may not further all of the agency's policy objectives." (*Watsonville Pilots, supra,* 183 Cal.App.4th at 1087.) *Watsonville Pilots* found legal error when a draft EIR failed to evaluate a reduced

development that failed to meet two of twelve objectives: "The City's argument on this issue is premised on its claim that no discussion of an alternative is required if that alternative would not meet a project objective. This premise is mistaken." (*Ibid*.)

3. The EIR Fails to Analyze Alternate Locations for Expansion

The CPHP DEIR identified several alternatives suitable for analysis, as follows: "No Project Alternative, consisting of No Development and Development under the 2014 LRDP;" "Reduced Project;" CPHP including New Hospital: 19-Story Option;" and CPHP including New Hospital - Phased Option." (AR 2106, 4271, 5754.) The DEIR formulated but dismissed from analysis the off-site alternatives of building the new hospital at UCSF's Mission Bay or Mount Zion properties. (AR 2154; 2157; 4319; 4322.) UC prejudicially abused its discretion by refusing to analyze these off-site alternatives within the EIR process as well as rejecting the Hunters Point/Candlestick location.

a. The Mission Bay Location

The EIR admits that the Mission Bay alternative would reduce the CPHP's significant wind impact in the vicinity of the new hospital, avoid the significant adverse impact of demolishing the historic Langley Porter Psychiatric Institute, and would also avoid construction and operational impacts associated with the new hospital. (AR 2155, 4320.) The EIR also finds that the Mission Bay alternative would result in "an estimated 284 fewer overall [hospital] beds at Parnassus Heights;" that "there are bed shortages for critical and acute care" in the City and the greater Bay Area, and the Mission Bay site thus "would not meet this growing demand, or allow for an expansion of emergency, surgical, interventional radiology, and imaging services, at this campus site." (AR 2104, 2164; 4269, 4319.)

However, increasing beds "*at Parnassus Heights*" is an unduly and self-servingly narrow EIR objective, precluding consideration of *any* off-site alternative. The DEIR fails to explain why the Mission Bay alternative could not be configured to increase available beds and why it is not "potentially feasible," which is the applicable legal standard, and led to a later unsupported finding that all alternatives were infeasible and eliminated from further consideration in the Draft EIR. (AR 247.)

The DEIR also finds, without support or fact-based analysis, that the Mission Bay alternative would "conflict with several 2014 LRDP objectives for the Parnassus Heights campus site" including the preference to locate instruction, clinical, research, and support uses in proximity "to foster collaboration and to facilitate the inter-dependence and connectivity for operational efficiency and effectiveness of instruction, clinical, research and support uses in close physical proximity to each other;" and "(e)nsure that Long Hospital and the New Hospital Addition have adequate clinical and administrative support and are aligned with education, research and specialized care programs and support that remain at the campus site." (AR 2155, 4320.)

The purported conflict is unsupported to the point of absurdity, rendering the EIR analysis inadequate. The EIR fails to explain that the 2014 LRDP contemplated meeting the same objectives without the vast expansion proposed in the CPHP. Moving some new facilities to Mission Bay would not conflict LRDP objectives, nor fundamental EIR objectives for the "New Hospital." (AR 1449.)

The DEIR pronounces that "by not developing a New Hospital at the Parnassus Heights campus site, and focusing future new clinical uses at the Mission Bay campus site, this potential alternative would also result in decreased efficiency for UCSF staff and students." (AR 2155, 4320.) "Decreased efficiency" is subjective, is not a fundamental objective á la *In re Bay-Delta*, and is a trumped-up reason *not to analyze* this alternative. Meeting all conceived objectives is not the standard at the EIR stage for an alternative that can reduce significant impacts. (*Watsonville Pilots*, *supra*, 183 Cal.App.4th at 1087.)

Goleta I, *supra*, 197 Cal.App.3d at 1179-80 held that an EIR for a resort hotel should have considered an alternate site: "Reason requires that the agency charged with the duty to protect the environment compare impacts at feasible alternative locations." As discussed ante, off-site alternatives cannot be rejected for analysis because a project proponent *does not want* an off-site project, any more than a reduced-size project can be rejected for that reason. (*Uphold Our Heritage*, *supra*, 147 Cal.App.4th at 602; *Preservation Action*, *supra*, 141 Cal.App.4th at 1355-56.) Otherwise, CEQA's requirement for consideration and analysis of off-site alternatives is meaningless.

Petitioner Yerba Buena Neighborhood Consortium submitted comments on the Draft EIR that explain that Mission Bay could

> ... fully accommodate expanded UCSF development of this scale and meet fundamental project objectives (*In re Bay-Delta* (2008) 43 Cal.4th 1143.) That of course is exactly what happened once before in 1996 with the decision to locate a new UCSF research campus in the already-approved Mission Bay Redevelopment Project.

(AR 6178.) Mission Bay is a logical, beneficial site at which to achieve project benefits without significant impacts, as is a promising hybrid alternative rejected from consideration: "No New Hospital at Parnassus Heights Campus Site/Implement Phase 2 of Medical Center at Mission Bay Campus." "In fact, the Mission Bay Hospital was justified in part by the development cap at the Parnassus Campus." (AR 5855.) The claim of increased crosstown traffic is not supported by evidence or analysis.

Failure to address alternatives utilizing the Mission Bay site in the DEIR was error warranting issuance of a peremptory writ. As pointed out in comments by the Consortium, "[t]he now almost-finished Mission Bay Project has conclusively proved that a UCSF campus can be a catalyst project that makes master-planned projects like these financially feasible for development. In particular, associated bio-med commercial development remains potentially viable."

b. The Mount Zion Location

The Mount Zion alternative location, two miles from the Parnassus Heights project site, reduces or avoids the same significant environmental impacts as the Mission Bay location. It was rejected for EIR analysis for failing to meet the same non-fundamental project objectives and creating the same purported "inefficiencies." The DEIR objects to Mount Zion as "less than ideal." (AR 2157, 4322.) This is not a CEQA standard. (*Laurel Heights I, supra*, 47 Cal.3d at 400.) Like Mission Bay, there is a rejected reasonable partial alternative that should also be considered; locating the new hospital at Mount Zion would remove significant impacts at Parnassus and meet fundamental objectives. (AR 255-57.)

c. The Hunters Point Location

The Draft and Final EIRs also fail to mention the Hunters Point off-site alternative that the Yerba Buena Neighborhood Consortium urged for consideration. UC owns 3.8 acres in Hunters Point with two single-story buildings used for an animal care facility. (AR 13583.) The City submitted EIR comments that included a draft "Racial & Social Equity Initiative" planning approach referencing Bayview/Hunters Point. (AR 6718, 6721-23, 6727-28.) When the 2014 LRDP was published, San Francisco had approved the Candlestick-Hunters Point Shipyard Development Plan, an extensive mixed-use redevelopment plan that did not proceed. (*Ibid.*) As pointed out by planner Terry Watt, the EIR fails to properly analyze project alternatives, including locating a new hospital at Hunters Point:

> Feasible alternatives to the Project, improperly dismissed by the Final EIR, that would reduce or eliminate significant Project impacts should be reinstated for consideration including . . . No New Hospital at Parnassus Heights Campus Site and instead one of the following: Implement Phase 2 of Medical Center at Mission Bay Campus Site; New Hospital at Mount Zion Campus Site; . . .New Hospital at Hunters Point at the Candlestick site formerly slated for a new shopping mall. Locating the new hospital here would avoid many of the impacts associated with the Parnassus site, and would have many co-benefits such as providing jobs in and health services to an underserved and disadvantaged community.

(SAR 63068-69.)

4. The FEIR Failed to Respond to Comments Regarding Off-site Alternatives

Petitioners have discussed the importance of adequate responses to EIR comments relative to EIR analysis, *ante*. As in many CEQA cases, especially those involving projects of regional importance and impact, the legal problem is both that the EIR failed to analyze the off-site alternatives *and*, as a separate violation of CEQA, that it failed to respond to public comments that requested the analysis.

The FEIR's "Master Response 5: EIR Alternatives" restates the DEIR's reasons for not analyzing the Mission Bay and Mount Zion alternatives and concludes that

> an alternative that would adopt and implement the CPHP without construction of a New Hospital at Parnassus Heights . . . would not address one specific need . . . which is the need for co-location of instructional, research, and clinical spaces, and would not achieve most of the basic project objectives as shown in Table 8.3-1 below.

(AR 5757 [Mission Bay]; 5759 [Mount Zion].) The master response points out that objectives "for the Parnassus Heights campus site... appropriately focus on UCSF's goals for the campus site, *since the proposed project is a plan for that campus site*." (AR 5754, italics added.) Under such circular logic, no project/plan EIR would need to consider off-site alternatives. Instead, CEQA requires consideration of "alternative locations" for a project based on the answer to a "key question":

> The key question and first step in analysis is whether any of the significant effects of the project would be avoided or substantially lessened by putting the project in another location. Only locations that would avoid or substantially lessen any of the significant effects of the project need be considered for inclusion in the EIR.

(Guidelines, § 15126.6 (f)(2)(A).) There is a caveat; if "no feasible alternative locations exist" of course a non-existent alternate site cannot be considered; "for example, . . . a geothermal plant or mining project must be in close proximity to natural resources at a given location." (*Id*. at (f)(2)(B).) The FEIR references *California Native Plant Society v. City of Santa Cruz* (2009) 177 Cal.App.4th 957, which dealt with needs of a public park that could only be resolved in that location. (AR 5755.)

The FEIR master response conflates the "potentially feasible" standard for including an alternative for analysis in a draft EIR with the "actually feasible" standard applicable to an agency's decision to *adopt* an alternative instead of the proposed project. But neither standard requires that every listed project objective be met. (*Watsonville Pilots*, *supra*, 183 Cal.App.4th at 1087.) The response never considers whether alternatives are "potentially feasible" and provides no substantial evidence to the contrary. Importantly, the omission of off-site alternatives for EIR discussion deprived the public and decision-makers of essential information.

Inadequate responses to individual comments regarding off-site alternatives include:

- **Comment Letter O-YNBC: Yerba Buena Neighborhood Consortium**. The Consortium urged EIR consideration of alternate off-site locations "to meet fundamental project objectives," noting "that is exactly what happened in 1996 with the decision to locate a new UCSF research campus in the already-approved Mission Bay Redevelopment Project." (AR 6178; see also Comment Letter I-Goodman (AR 23, 6316, 6326-27).) The FEIR relied on its inadequate Master Response 5, discussed *ante*, providing no comment-specific analysis. (AR 6179.)

- **Comment Letter I-Leonard: Edward Leonard**. The Leonard letter reiterates the need for the EIR to analyze alternate sites, especially in light of the space ceiling that UC committed to because "expansion at the Parnassus Campus was not feasible." (AR 6380, 6383-84.) "There are

several suitable, if not superior, alternatives to accomplishing UCSF's objectives, not requiring the building of an elephantine structure, completely unsuitable for the space it will occupy, in a residential neighborhood. If UCSF really requires a hospital as big as it claims, it should find an appropriately scaled new site." (AR 6379-84.) The FEIR again simply refers the commentor to its master response. (AR 6389.)

- **Comment Letter O-LD2: Lozeau Drury**. The 46-page letter written by attorney Richard Drury on behalf of the Parnassus Neighborhood Coalition addressed off-site alternatives in depth, including the need for analysis of the reasonable and potentially-feasible sites. (AR 5853-56.) Mr. Drury's analysis is reflected in the arguments presented *ante* regarding the DEIR's inadequate analysis of alternatives. The response again relies on Master Response 5. (AR 5978.)

The FEIR did not adequately respond to comments regarding the three off-site alternatives.

5. Approval Findings are Premature

In assessing feasibility of an alternative to reduce or avoid significant environmental impacts, an agency must consider whether external conditions stand in the way of its successful accomplishment rather than whether non-basic project objectives are met. UC's findings certifying the EIR and approving a project with many significant impacts and without locating any portion at an alternate site based on claimed infeasibility are both unsupported and premature. (AR 247-59.) As in the *Uphold Our Heritage* and *Preservation Action* cases, to name a few, an adequate EIR is prerequisite for considering CEQA approval findings. (*Ante*.) The UC Regents do not yet have sufficient information to determine feasibility of alternate sites for any or all Project purposes.

Conclusion

Petitioners request this Court's judgment and issuance of a peremptory writ of mandamus in the public interest, ordering the University of California to fully comply with CEQA. UC must first set aside approvals of the Comprehensive Parnassus Heights Plan and void its certification of the EIR.

Respectfully submitted.[36]

[36] This brief is co-written and is signed by counsel for Petitioners in three related cases (Case Nos. RG21088939, RG21089332, and RG21090517). By executing this brief, the undersigned counsel do not appear for or undertake representation of any petitioner other than as identified in the signature lines.

November 5, 2021

SOLURI MESERVE, A LAW CORPORATION

By: _____
Patrick M. Soluri
Attorneys for Plaintiffs and Petitioners
PARNASSUS NEIGHBORHOOD COALITION AND CALVIN WELCH

November 5, 2021

LAW OFFICE OF THOMAS N. LIPPE

By: _____
Thomas n. Lippe
Attorneys for Petitioner SAN FRANCISCANS FOR BALANCED AND LIVABLE COMMUNITIES

November 5, 2021

WITTWER PARKIN LLP

By: _____
William P. Parkin
Attorneys for Petitioner SAN FRANCISCANS FOR BALANCED AND LIVABLE COMMUNITIES

November 5, 2021

BRANDT-HAWLEY LAW GROUP

By: _____
Susan Brandt-Hawley
Attorney for Petitioner
YERBA BUENA NEIGHBORHOOD CONSORTIUM

PROOF OF SERVICE

I am a citizen of the United States, employed in the City and County of San Francisco, California. My business address is 201 Mission Street, 12th Floor, San Francisco, CA 94105. I am over the age of 18 years and not a party to the above entitled action. On November 5, 2021, I served the following on the parties below, as designated:

- **Petitioner's Revised Opening Brief on the Merits**

MANNER OF SERVICE

[x] By One Legal Electronic Service — I caused such document to be served via One Legal electronic service on the parties in this action by transmitting and uploading a true copy to One Legal interface by providing the following email address(es) listed under each addressee below.

[ ] By E-mail: — I caused such document to be served via electronic mail equipment transmission (e-mail) on the parties as designated on the attached service list by transmitting a true copy to the following e-mail addresses listed under each addressee below from e-mail address kmhperry@sonic.net. I did not receive, within a reasonable time after the transmission, any electronic message or other indication that the transmission was unsuccessful.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct. Executed on November 5, 2021, in the County of Contra Costa, California.

Kelly Marie

Kelly Marie Perry

SERVICE LIST

Charles Olson Philip J. Sciranka Lubin Olson 600 Montgomery St., 16th Floor San Francisco, CA 94111 *email:* colson@lubinolson.com; psciranka@lubinolson.com; clee@lubinolson.com; jwilson@lubinolson.com; msaephan@lubinolson.com Attorneys for Respondents The Regents of the University of CA, et al.	Patrick M. Soluri Osha Rose Meserve Wona Rosier-Arauz SOLURI MESERVE, A LAW CORPORATION 510 8th Street Sacramento, CA 95814 Email: patrick@semlawyers.com; osha@semlawyers.com; wona@semlawyers.com Attorneys for Petitioners Parnassus Neighborhood Coalition; and Calvin Welch

Law Offices of
Thomas N. Lippe
201 Mission St. 12th Floor
San Francisco, CA 94105
Tel: 415-777-5604
Fax: 415-7775606

Susan Brandt-Hawley Jeanie Stapleton BRANDT-HAWLEY LAW GROUP P.O. Box 1659 Glen Ellen, CA 95442 Telephone: (707) 938-3900 Email(s): susanbh@preservationlawyers.com; jstapleton@preservationlawyers.com Attorneys for Petitioner Yerba Buena Neighborhood Consortium, LLC	Anagha Dandekar Clifford (SBN 233806) UNIVERSITY OF CALIFORNIA Office of General Counsel 1111 Franklin Street, 8th Floor Oakland, California 94607 Telephone: (510) 987-0356 Email: anagha.clifford@ucop.edu Attorney for Respondents The Board of Regents of the University of CA

Law Offices of
Thomas N. Lippe
201 Mission St. 12th Floor
San Francisco, CA 94105
Tel: 415-777-5604
Fax: 415-7775606

EXHIBIT 3

Thomas N. Lippe, SBN 104640
LAW OFFICES OF THOMAS N. LIPPE, APC
201 Mission Street, 12th Floor
San Francisco, California 94105
Tel: (415) 777-5604
Fax: (415) 777-5606
E-mail: Lippelaw@sonic.net

William P. Parkin, SBN 139718
WITTWER PARKIN LLP
335 Spreckels Drive, Suite H
Aptos, CA 95003
Tel: (831) 429-4055
Fax: (831) 429-4057
E-mail: wparkin@wittwerparkin.com

Attorneys for Petitioner San Franciscans for Balanced and Livable Communities

IN THE SUPERIOR COURT OF THE STATE OF CALIFORNIA

IN AND FOR THE COUNTY OF ALAMEDA

SAN FRANCISCANS FOR BALANCED AND LIVABLE COMMUNITIES, an unincorporated association;

Petitioner,

vs.

THE REGENTS OF THE UNIVERSITY OF CALIFORNIA; UNIVERSITY OF CALIFORNIA; UNIVERSITY OF CALIFORNIA, SAN FRANCISCO; MICHAEL V. DRAKE, in his capacity as President of the University of California; SAM HAWGOOD, in his capacity as Chancellor of the University of California, San Francisco; and DOES 1 through 30,

Respondents.

Case No. RG21089332

RELATED CASES:
CASE NO. RG21088939 and
CASE NO. RG21090517

PETITIONER'S REPLY BRIEF ON THE MERITS

[CEQA]

Trial Date: January 14, 2022
Time: 2:00 p.m.
Dept.: 17
Judge: Honorable Frank Roesch

Action Filed: February 19, 2021

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Introduction

The merits of this public interest action are not refuted by the University of California. The CPHP EIR fails to achieve its purpose. As always, the standard of review plays a critical role in assessing CEQA compliance. The Supreme Court has in recent years reiterated that if an EIR process fails to comply with mandated procedures, or if the EIR omits essential information or insufficiently analyzes impacts, judicial review is de novo, while the substantial evidence standard applies to factual findings. UC's repeated, incorrect assertions of broader substantial evidence review invite error.

The context of UC efforts to overbuild the Parnassus Heights campus warrant mention as remarkable and relevant. The campus is beautiful, historic, and constrained. Indeed, in the 1990's UC developed a facility a few miles away at Laurel Heights justified by the claimed infeasibility of expansion at Parnassus. The constraints remain, and the CPHP EIR's failure to analyze *any* potentially feasible off-site alternatives at *sites owned by UC* — which it has long admitted are essential to avoid overbuilding Parnassus — violates CEQA.[1]

Petitioners in the related cases respectfully request this Court's judgment and peremptory writ.

Discussion

A. The EIR Fails to Analyze Any Off-Site Alternatives

The CPHP EIR failed to study — and therefore, the UC Regents had no opportunity to review or adopt — potentially feasible off-site alternatives. UC *owns multiple properties* in San Francisco that were acquired specifically to address space constraints at Parnassus, and so can meet fundamental plan objectives and avoid or reduce significant impacts at Parnassus. The error is prejudicial because identifying and adopting feasible alternatives is the primary goal of CEQA.

In arguing that it sufficiently studied and rejected off-site alternatives, UC's brief misstates the law. First, it posits that as the lead agency, it — instead of "a project's critics" — has sole responsibility for formulating a range of alternatives for the EIR to study (Respondents' Opening Brief (ROB) 67:11), citing *Laurel Heights Improvement Association v. Regents of the University of California* (1988) 47 Cal.3d 396, 406 (*Laurel Heights I*). In *Laurel Heights I*, the Regents had argued that "CEQA places the

[1] If UC is ordered to produce the relevant record documents that it has withheld to date, including, for example, documents that it describes as addressing its decision not to pursue EIR analysis of alternative UC-owned sites, petitioners will seek to supplement their merits briefing as appropriate.

burden of identifying alternatives" on environmental petitioners. The Supreme Court ruled their position was "not supported" because the *responsibility for EIR adequacy* lies with the lead agency. (*Ibid.*)

The take-away is that concerned citizens are *not required to* — but may — point out deficiencies in an EIR process so that a lead agency will meet its responsibilities to certify an adequate EIR. "'It is not limited to alternatives proposed and justified by objectors [to an EIR].' (*Citizens of Goleta Valley v. Board of Supervisors* (1988) 197 Cal.App.3d 1167, 1178.)" (*Laurel Heights I, supra*, 47 Cal.3d at 406.)

It is ironic that UC relies on *Laurel Heights I,* in which the Supreme Court reviewed the inadequate EIR prepared when UC expanded its San Francisco properties to a new campus two miles away from Parnassus in Laurel Heights *because* "there were serious space constraints at the Parnassus campus and ... a need to develop off-campus locations for academic and support activities. (*Laurel Heights I, supra*, 47 Cal.3d at 388.) To be clear, UC justified acquisition of the Laurel Heights site to avoid new construction that otherwise would have caused significant impacts at Parnassus. (*Ibid.*)

The revised EIR for Laurel Heights was again at issue in *Laurel Heights Improvement Association v. Regents of the University of California* (1993) 6 Cal.4th 1112, 1141 (*Laurel Heights II*):

> [The Parnassus Heights] campus .... *is the most densely developed* of all [UC] facilities. The draft EIR ... explains that, because the necessary space at the Parnassus Heights campus can only be created by demolition of existing buildings fully in use or by violating the limits adopted in the long-range development plan, the alternative of *expansion at this site is infeasible*.

(Italics added.) UC lacks credibility when it now contends that it is not even *potentially* feasible to construct new facilities at its other City campuses, that the CPDP EIR thus need not study any off-site alternatives, and that it is *only* feasible to build new facilities at Parnassus. (ROB 67-69.) The Parnassus campus site has not grown since UC took the position that it could not feasibly accommodate a 370,000 square-foot research facility. (*Laurel Heights II, supra*, 6 Cal.4th at 1120.) The CPHP, including the proposed 995,000 square-foot New Hospital (Petitioners' Opening Brief (POB) 12), would cause significant environmental impacts and the demolition of buildings of even more historic importance today than in 1982. UC has to date protected its historic resources and avoided significant impacts by development at Laurel Heights, Mt. Zion, and Mission Bay, *away from* Parnassus.

UC argues, based on inaccurate references to CEQA Guidelines [14 Cal.Code Regs.], sections 15151 and 15384, that courts review an EIR's range of project alternatives for substantial evidence.[2]

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[2] Guideline 15151 describes standards for EIR adequacy; 15384 defines substantial evidence. Neither directs that the range of alternatives for study in an EIR is reviewed for substantial evidence.

(ROB 67:12-13.) Instead, "[e]ach case must be evaluated on its facts ... in light of the statutory purpose." (*Watsonville Pilots Association v. City of Watsonville* (2010) Cal.App.4th 1059, 1086 (*Watsonville Pilots*) [Citation].) The nature and scope of the alternatives to be studied in an EIR is governed by the rule of reason. (Guidelines, § 15126.6 (a); *In re Bay-Delta* (2008) 43 Cal.4th 1143, 1163.) Further, "the fact that agency decision-makers may ultimately find an alternative infeasible does not necessarily preclude it from being discussed in the EIR. An alternative that is potentially feasible should not be excluded from an EIR simply because it may not further all of the agency's policy objectives." (*Watsonville Pilots*, *supra*, 183 Cal.App.4th at 1087.)

Of course, an EIR need not study "each and every conceivable variation" of a proposed project. (ROB 67:14-15.) And that is not what petitioners seek, any more than they pursue *any* trivial or "gotcha" CEQA violation. UC pronounces that no off-site alternative would meet its objective to "revitalize the aging Parnassus Heights campus." (ROB 67-68.) But three suggested off-site locations *already owned by UC* can accommodate the New Hospital *while revitalization of the Parnassus campus proceeds with other important, long-planned project components.* As the alternate sites can "attain most of the basic objectives" of the plan and reduce significant impacts, EIR review will "foster meaningful public participation and informed decision making." (ROB 67:17; Guidelines, § 15126.6 (f).)

UC unlawfully excluded study of *any and all* off-site alternatives based on an unduly narrow definition of "revitalizing the Parnassus campus." Analysis of alternate sites in the EIR is critical to inform the Regents' consideration of the feasibility of locating some new facilities — *e.g.*, the New Hospital — off-site to reduce or avoid significant impacts. "While a lead agency may not give a project's purpose an artificially narrow definition, [it] may structure its EIR alternative analysis around a reasonable definition of underlying purpose." (*In re Bay-Delta*, *supra*, 43 Cal.4th 1143, 1166.)

UC attempts to distinguish this case from *Watsonville Pilots, supra,*183 Cal.App.4th at 1087, arguing that the record proves that alternate sites *cannot* accomplish "most" project objectives. But UC focuses on only 5 out of 42 objectives, not "most;" further, the cites do not prove what UC says they do:

AR 247-48: UC's CEQA findings "screen out" EIR review of a New Hospital at Mission Bay or Mt. Zion. Any large project has environmental consequences. UC's omission of alternate sites from analysis relate to unstudied impacts of differences between the current and *any* revised project — fewer beds *at Parnassus*, theoretical increase in some cross-town traffic between Mission Bay and Parnassus, decreased benefits of interdisciplinary collaboration *at Parnassus.* The findings assume but do not show infeasibility, greater impacts than the current project, or failure to accomplish fundamental objectives.

AR 255-57: UC's CEQA findings address responses to EIR comments requesting analysis of off-site alternatives. The findings refuse to study the alternatives, but acknowledge that locating the New Hospital at the Mission Bay or Mt. Zion campuses would reduce conceded impacts at Parnassus, while other impacts will shift from Parnassus to the new hospital sites.

AR 2154-57; AR 4319-22: The Draft EIR provides a conclusory discussion as to why alternatives were "dismissed from further evaluation," later mirrored in the findings addressed at AR 247-48, above, without underlying analysis, *e.g.* "increase potential cross town traffic."

AR 5756-57: The EIR responds to comments requesting analysis of off-site alternatives, particularly for the New Hospital, and provides a conclusory discussion as to why *no* off-site alternatives could satisfy objectives relating to the Parnassus site, later mirrored in the findings addressed at AR 255-57, above. The conclusory response is not adequate.

Finally, UC argues that it had sufficient information as to whether alternate sites were feasible "including multiple prior EIRs addressing the issue." (ROB 71:17-19.) UC then repeats the AR citations to the findings and EIR pages discussed above regarding alternatives rejected from study in the EIR; adds a cite to the Draft EIR Alternatives section that contains the four (*on*-site) alternatives that the EIR did study, and ends with cites to a 5000-page block at AR 8981-13658 [documents from 2005-2014]. The citations are not probative or even helpful.

Absent analysis of *any* off-site alternatives *in the EIR*, UC's violation of CEQA is blatant.

B. EIR Analysis of Growth Inducing and Population/Housing Impacts is Inadequate

Contrary to UC's argument (ROB 25:9-16), petitioners do not confuse the EIR's growth inducement and population/housing analyses. Read together, both chapters fail to assess off-campus housing displacement impacts of increasing campus population or the physical impacts of building housing to meet increased demand. (POB 17:4-26.)

1. The EIR Omits Analysis of Off-Campus Housing Displacement Effects

Petitioners claim that the EIR's analyses of Impacts POP-1 and POP-2 improperly exclude consideration of housing displacement effects in the surrounding community. The EIR's analysis of Impact POP-1 relates to "unplanned population growth" and the creation of "demand for housing outside the market area" while its analysis of Impact POP-2 only considers temporary displacement of on-campus tenants. (POB 17-21.) UC fails to address the fact that the POP-2 analysis is improperly limited geographically and fails to assess displacement as opposed to mere growth in housing demand.

UC's argument that "the CPHP is adding housing for some of the population growth related to CPHP" (ROB 25:5-6, citing AR 1983) ignores the EIR's failure to analyze off-campus displacement. (POB 19:3-16; *American Canyon Community v. City of American Canyon* (2006) 145 Cal.App.4th 1062, 1066-1067, 1081-1082 [failure to consider extraterritorial effects]; *Lotus v. Dept. of Transportation* (2014) 223 Cal.App.4th 645, 658 (*Lotus*) [substituting mitigation for impact analysis violates CEQA].)

UC pronounces the EIR's characterization of population growth not off-set by new campus housing as "insubstantial" when compared to regional growth as "satisfied by housing that could be added" in the study area; and "within the capacity" of the five-county market area. (ROB 24:13-21; citing AR 1980-81, 1984-85.) But capacity to meet housing demand growth is not relevant under the threshold of significance: which is whether a project would "displace substantial numbers of existing people or housing" and create need for replacement housing. (POB at 18:4-7.) EIR review is needed.

While UC's new population might theoretically be housed without displacement if housed only in new units, that is not UC's plan. UC committed to provide over 1200 housing units for its population from existing units, so significant displacement of residents will certainly occur. (AR 1314-15.) What is missing from the EIR is analysis that relates the CPHP's 4,000 to 6,000-unit increased housing demand to baseline and cumulative conditions. Such analysis would allow a prediction of the extent to which the CPHP may cause off-campus displacement or require construction of housing.

Planner Terry Watt presented a fair argument that project demand would outstrip local supply and identified information that the EIR should have but fails to provide, including housing availability in the surrounding neighborhood, affordability, local and new population incomes, and rents. (POB 18:14-22.) Watt provided uncontroverted evidence that San Francisco has been creating 8.2 jobs per housing unit since 2010; that there is a regional housing shortfall of 700,000 units; that the Bay Area has produced only 35% of the units required for moderate and lower income workers since 1999; and that the City is experiencing gentrification. (AR 5989-5990.) Watt cites salary data that the new UCSF population would compete for housing affordable to lower income families. (AR 5896.) Watt reasonably concludes that housing demand would cause a significant impact. (AR 5900.)

2. The EIR Erroneously Treats Displacement as a Speculative Social Effect

Petitioners claim that the EIR fails to proceed as required by CEQA due to informational inadequacy; UC's argument that substantial evidence supports the EIR's conclusion regarding population and housing impacts is irrelevant. (ROB 23:9-24:21; POB 15:26-16:1.) Since the EIR fails to

assess the significance of project-induced off-campus displacement or need for replacement housing, whether substantial evidence could support a finding to that effect is premature. (POB 18:4-7.),

Contrary to UC's false flag argument, petitioners do not rely on *Stanislaus Audubon Society, Inc. v. County of Stanislaus* (1995) 33 Cal.App.4th 144, a negative declaration case, to support application of the fair argument standard here. (ROB 26:18-27:6; POB 14:27; 16:1, citing *Visalia Retail, LP v. City of Visalia* (2018) 20 Cal.App.5th 1, 13; *Protect the Historic Amador Waterways v. Amador Water Agency* (2004) 116 Cal.App.4th 1099, 1109 (*Amador Waterways*) [EIR must analyze every issue for which the record contains substantial evidence supporting a fair argument of significant impact].)[3]

UC does not point to any evidence that the EIR addresses the substance of Watt's fair argument or that its experts considered or reached a different conclusion regarding the indirect physical effects associated with displacement. Instead, while conceding that "new off-site housing would be constructed," UC argues that "it would be speculative to characterize the site-specific environmental effects." (ROB 26:10-11, citing AR 2098.) The EIR's assertion on this point is conclusory, without factual support. An agency "cannot divest itself of its analytical and informational obligations by summarily dismissing the possibility" of indirect effects. (*Bakersfield, supra,* 124 Cal.App.4th at 1207.) CEQA does not permit deferral of analysis of housing-related impacts simply because the precise nature and extent of development are unknown. (POB at 21:1-10). Both Watt and the City's public health guidance identify the elements of the required analysis, and Watt followed that guidance to provide an unrebutted fair argument that displacement effects would be significant. (AR 5879, 5989; 5894-5901 [Watt]; AR 6867-85 [SFDPH] 4-15.)

UC's argument that it was entitled to disagree with Watt regarding the potential significance of the displacement impact is irrelevant because the EIR did not evaluate the issue. UC's argument that it was entitled to ignore the City guidance because it is "not subject to City policies" (ROB 26:26) misses the point that this guidance provides part of the basis for fair argument that the impact may be significant, even if it is not directly enforceable against UC.

3. The EIR Incorrectly Applies "Ratio Theory" and an Improper Baseline

UC argues that the EIR does not rely on a ratio theory because its definition of "substantial

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[3] See also, *Bakersfield Citizens for Local Control v. City of Bakersfield* (2004) 124 Cal.App.4th 1184, 1207 (*Bakersfield*) [EIR must evaluate indirect physical effects of economic and social effects where fair argument standard is met]; 1208 [standard of review for whether EIR fails to analyze potentially significant indirect physical impact is whether agency failed to proceed as required by law].)

unplanned population growth" is growth "inconsistent with growth anticipated in adopted planning documents." (ROB 27:17.) UC also argues that the EIR establishes "an appropriate baseline" (AR 1973-74) and that the EIR shows that projected growth is consistent with "growth anticipated in adopted planning documents." (ROB 27:19-21.) These defenses fail.

Neither the EIR nor UC dispute the existence of the regional housing shortage documented by Watt. (POB 18:12.) CEQA does not permit a "ratio" analysis in which a project's contribution to a cumulative impact is deemed less than significant based "upon the individual project's relative effects…" (*Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692, 721.) The EIR cannot dismiss the significance of the project's contribution to the regional housing shortage simply because it "would not be substantial in comparison to growth that is projected and planned" for the region. (POB 21:24-22:5.) UC fails to address petitioners' authorities on this point.

The EIR fails to provide a legally adequate non-comparative, non-ratio cumulative analysis. An adequate analysis requires that the EIR first assess whether there is a significant cumulative impact from all projects taken together; if so, the EIR must separately determine if the project's contribution is considerable. (Guidelines, §§ 15065(a)(3); 15130(a); 15355; *Communities for a Better Environment v. California Resources Agency* (2002) 103 Cal.App.4th 98, 120 (*CBE v. Resources*) ["... the lead agency shall consider whether the cumulative impact is significant and whether the proposed project's incremental effects are cumulatively considerable"]; Kostka and Zischke, "Practice Under the California Environmental Quality Act" (2nd Ed., 2019 Update), § 13.39.) In that second determination, the EIR may not rely on a comparison or a ratio because "the greater the existing environmental problems are, the lower the threshold should be for treating a project's contribution to cumulative impacts as significant." (*CBE v. Resources, supra,* 103 Cal.App.4th at 120.)

Regarding the EIR's improper application of a future planning baseline, the EIR's error lies in using this baseline to exclude consideration of substantial evidence tending to show the physical impact may be significant. (POB 16:1, citing *Amador Waterways*, *supra*, 116 Cal.App.4th at 1108-1109.) UC also fails to address authority that comparison to planned growth improperly compares a project's impact to a plan for the future rather than to existing conditions. (POB 22:6-10.) Here, the relevant comparison must be to the existing conditions, not to future conditions, because the project will contribute to a significant existing housing shortage. Further, the EIR fails to demonstrate that the use of an existing conditions baseline would result in an inadequate or misleading analysis (*Neighbors for Smart Rail v. Exposition Metro Line Construction Authority* (2013) 57 Cal.4th 439, 457 (*Smart Rail*).)

4. The EIR Piecemeals Analysis of the New Housing Initiative

The EIR omits any analysis of UC's last-minute commitment to provide off-campus housing units in the City; therefore, it fails to evaluate the whole of the project. (POB 22:10-23:8.) UC does not dispute that its commitment to provide these units was not disclosed until issuance of the Final EIR.

The MOU commits UC to provide over 2500 rental units in the City for the UC population, of which about 1200 would be diverted from existing units and about 1200 would be new units. (AR 1314-15.) Of these units, 1,000 must be "UC Affordable Units" that are "comprised of new and existing units." (AR1315.) Thus, the MOU commits UC to displace non-UC tenants from at least 1,200 existing units and potentially to displace additional tenants as necessary to construct new units on existing residential sites. Omission of the MOU's housing unit commitment from the EIR's impact analysis understates the potential for displacing existing City residents.

Focusing on the 200 new units for which locations have not yet been identified, UC argues that there is "no proposal and no discretionary action yet to implement the additional 200 units." (ROB 28:7) This is incorrect. UC's commitment to provide these units is a discretionary action. (*Save Tara v. City of West Hollywood* (2008) 45 Cal.4th 116, 139 (*Save Tara*).)

UC argues that the new units include two projects that completed CEQA review years ago, plus 200 additional units for which City would conduct CEQA review in the future, thereby obviating the need for CEQA review now. (ROB 27:22-28:9.) These arguments fail. The EIR failed to "tier" to such past review as required by CEQA. (*Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova* (2007) 40 Cal.4th 412, 443 (*Vineyard Area Citizens*), quoting Guidelines, §§ 15150(c) [when an EIR incorporates an earlier environmental document by reference, "the incorporated part of the referenced document shall be briefly summarized" and "[t]he relationship between the incorporated part of the referenced document and the EIR shall be described"]; see § 15152 (g).) UC's brief cannot cure the EIR's failure to tier to an earlier CEQA document.

Regarding the promise of future CEQA review for the rest of the units, UC cites nothing in the MOU requiring such review. Even if it did, future "CEQA review" could result in an exemption from CEQA, perfecting the piecemealing violation that began with this EIR's failure to analyze the impact of providing the new units. Also, the EIR cannot tier *from* a future environmental document. (*Vineyard Area Citizens, supra,* 40 Cal.4th at 440 [Court rejected this "approach as legally improper"].) Also, UC's pre-commitment may improperly "preclude any alternatives or mitigation measures that CEQA

would otherwise require to be considered, including the alternative of not going forward with the project." (*Save Tara, supra,* 45 Cal.4th at 139.)

C. The EIR Inadequately Analyzes Beach Water Quality Impacts

1. Standard of Review

UC asserts that an EIR's description of the environmental baseline is reviewed for substantial evidence. (ROB 28, citing *Smart Rail, supra,* 57 Cal.4th at 447-49; *Communities for a Better Environment v. South Coast Air Quality Management Dist.* (2010) 48 Cal.4th 310, 328 (*Communities*).) These cases are inapposite. *Smart Rail* involved a claim that an EIR's description of future conditions as its environmental baseline, rather than existing conditions, was improper. *Communities* challenged an agency's choice of methodology to measure changing baseline conditions. Here, the challenge is to the EIR's failure to describe the physical and regulatory components of the environmental setting as they relate to beach water quality. (AR 1895-1911.) The Court reviews de novo whether the EIR omitted this essential information as a failure to proceed in the manner required by law. (POB 14.)

2. The EIR Fails to Adequately Describe the Environmental Baseline

Petitioners' opening brief details the EIR's failure to describe severely-degraded existing beach water quality conditions and the ineffectiveness of existing regulatory controls. (POB 25-26.) In response, UC argues it is "not in a position to verify observed non-compliance or opine on potential future enforcement actions by regulatory agencies" nor to "compel regulatory agencies governing San Francisco's sewage treatment plants to enforce compliance with their own regulations." (ROB 29:6.) This argument misconceives the claim. The issue is not what actions UC must take to clean up water pollution in San Francisco; the issue is whether the EIR properly analyzes and discloses the significance of the CPHP's contribution to worsening existing water quality conditions. This legal obligation exists regardless of whether UC can single-handedly solve the problem.

UC argues that "[a]n EIR need not resolve existing environmental problems that will not be exacerbated by the project, which is the case here." (ROB 29:6.) The problem for UC is that the EIR admits the CPHP will *exacerbate* this environmental problem, generating about 0.18 million gallons per day (mgd) of new wastewater/sewage. (AR 2084.) The FEIR admits that the CPHP's beach water quality impacts could be significant. (AR 4062; 222-226; 5783-5788 [Master Response 12].) UC's lawyers cannot disavow these record facts in their brief.

> The audience to whom an EIR must communicate is not the reviewing court but the public and the government officials deciding on the project. That a party's briefs to the court may explain or supplement matters that are obscure or incomplete in the EIR, for example, is irrelevant, because the public and decision makers did not have the briefs available at the time the project was reviewed and approved.

(*Vineyard Area Citizens, supra,* 40 Cal.4th at 443.)

UC argues that the DEIR's description of the City plumbing system satisfies its obligation under CEQA to describe existing degraded beach water quality conditions. (ROB 29:23-30:12.) But the description provides no clue to the reader that beach water quality is routinely unhealthy for humans.

UC also relies on the FEIR's addition of new provisions to MM-HYD-1, "to control where it makes sewer connections for the campus site to the City's CSS system, and therefore, control the flows it would send to either the OSP or the SEP." (ROB 30:1.) This information was first provided in the FEIR's response to comments, too late in the process. (AR 5783-88.) It is critical to provide accurate setting information in the DEIR as a basis for impact analysis, so that the public can comment on impacts, the FEIR can respond, and the agency has the benefit of the process in making decisions. (POB 24-2; *San Joaquin Raptor/Wildlife Rescue Center. v. County. of Stanislaus* (1994) 27 Cal. App. 4th 713, 727; *Communities for a Better Env't v. City of Richmond* (2010) 184 Cal.App.4th 70, 89 [baseline required "at the beginning of the CEQA process"]; *Galante Vineyards v. Monterey Peninsula Water Mgmt. Dist.* (1997) 60 Cal.App.4th 1109, 1124 [tardy baseline disclosure not cured by later analysis].)

UC's citation to information in the FEIR supports the claim that the EIR must be recirculated in revised form. (POB 29-30). Also, the information that UC cites is part of an illegally deferred and unenforceable new mitigation measure. (POB 30-31.)

Regarding the Draft and Final EIRs' failures to describe the ineffective regulatory system for protecting beach water quality, UC argues that "the EIR extensively discusses the environmental and regulatory settings of beach water quality and analyzes Project impacts on beach water." (ROB 30:23.) This bald legal conclusion is unsupported by any record cites.

3. The EIR Relies on Ratio Theory and Other Regulatory Programs

UC argues, without citing any record evidence, that the EIR did not rely on the small ratio of the CPHP's incremental contribution to beach water pollution to conclude that the impact is less than significant. (ROB 31:3-18.) UC ignores the opening brief's point that the EIR concludes the CPHP's impact would be less than significant because the increase in the acreage of impervious surfaces *is only*

4% compared to the current acreage of impervious surfaces on campus. (POB 24:13, citing AR 1905-06.) UC's unsupported defense should be rejected.

UC also argues, again without citing record evidence, that the EIR did not rely on another agency's regulatory program to conclude that the CPHP's impact would be less than significant. (ROB 31:19-27.) UC argues that the case cites offered in the opening brief are inapposite because in those cases the agencies "skipped" environmental analysis. (ROB 31:19-27.) UC (i) does not contest the legal rule that an agency cannot rely on another agency's regulatory program to conclude that an impact is less than significant; (ii) does not cite record evidence that the CPHP EIR did not do so; and (iii) does not rebut the evidence cited in the opening brief that this EIR does, in fact, "skip" environmental analysis. UC's defense is thus unavailing.

4. The FEIR's Responses Require Recirculation of a Revised Draft EIR

UC incorrectly argues that the Court reviews all "recirculation claims" for substantial evidence. In fact, the petitioners' recirculation claim regarding water quality is reviewed de novo.

Recirculation is required when "significant new information" is omitted from a Draft EIR and added to a Final EIR. (Pub. Resources Code, § 21092.1[4]; Guidelines, § 15088.5(a).) In its seminal recirculation case, the California Supreme Court explained the central role of public participation through comment and response, holding that "public participation is an 'essential part of the CEQA process.'" (*Laurel Heights II, supra,* 6 Cal.4th 1112, 1123.) Recirculation is intended to permit public comment on new information and require agency responses. (Guidelines, § 15088.5 (f).) *Laurel Heights II* enumerated four categories of "significant new information" that require recirculation, now identified in Guidelines section 15088.5 (a)(1)-(4). (*Laurel Heights II, supra,* 6 Cal.4th at 1130 and n.15.) Petitioners seek recirculation under the fourth category, alleging significant new information disclosed after the DEIR was published "that the draft EIR was so fundamentally and basically inadequate and conclusory in nature that public comment on the draft was in effect meaningless." (*Id.* at 1130.)

Laurel Heights II recognizes that the fourth recirculation criterion is different from the first three:

> With the addition of the fourth category of 'triggering information' to the list, we recognize that 'significance' for purposes of section 21092.1 cannot be defined exclusively in terms of the grounds for recirculation found in section 21166, from which the first three categories are drawn. The different circumstances governed by these statutes mandate this conclusion.

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[4] All cites to statutory authority are to the Public Resources Code unless otherwise stated.

(*Laurel Heights II*, 6 Cal.4th at 1130.) The fourth criterion is similar to whether an EIR's omission of essential information precludes informed decisionmaking and public participation. Supreme Court decisions hold that this question is reviewed de novo. (POB 14-15.) Reviewing a fourth criterion recirculation claim for substantial evidence as urged by UC is inconsistent with these decisions.

Moreover, *Laurel Heights II* held that determining the standard of review for a recirculation claim is case-specific: "We conclude that the substantial evidence standard set forth in section 21168.5 governs the Regents' decision not to recirculate the EIR in this case." (*Laurel Heights II*, 6 Cal.4th at 1135.) The recirculation dispute involved five sources of new information that clarified or confirmed matters already fully disclosed and analyzed in the Regent's informationally adequate EIR. (*Id.* at 1136.) *Laurel Heights II* addressed whether that information constituted "significant new information" under the first three criteria of Guideline section 15088.5. (*Id.* at 1137-1141.) Again, the claim here addresses omission of essential information regarding beach water, implicating the fourth criterion.

UC's reliance on *South County Citizens for Smart Growth v. County of Nevada* (2013) 221 Cal.App.4th 316, 330, is similarly misplaced, as it addresses a mitigation measure adding "significant new information" under the third criterion, at Guideline section 15088.5(a)(3) and does not address the arguments above. Appellate decisions are not authority for propositions not expressly considered. (*People ex rel. City of Santa Monica v. Gabriel* (2010) 186 Cal.App.4th 882, 891.)

Save Our Peninsula v. Monterey County Board of Supervisors (2001) 87 Cal.App.4th 99, 111, 114, 122-128 [water quantity], 112, 131-134 [water source] required recirculation of an EIR that belatedly disclosed baseline water use and recharacterized the water source as riparian. The Final EIR in *Sutter Sensible Planning, Inc. v. Board of Supervisors* (1981) 122 Cal.App.3d 813, 817-18 required recirculation as it included "a more elaborate discussion of groundwater availability and the projected impact of the plant on the water table" and substituted new "estimates of evapo-transpiration potentials ... for figures used in the previous EIR which were repudiated by their purported author." (*Id.*, at 817-18.) Here, the FEIR makes analogous setting description changes because it reverses field and admits that the CPHP could make degraded beach water quality worse.

5. The EIR Improperly Defers the Formulation of Mitigation Measures

UC defends the "deferred" mitigation claim by arguing that MM-HYD-1 will be "implemented before final design approval to reduce the Project's potentially significant impacts on beach water quality." (ROB 33:9.) This is irrelevant, because "[t]he delayed implementation of mitigation measures is a type of delay distinct from deferred formulation," (*King & Gardiner Farms, LLC v. County of Kern*

(2020) 45 Cal.App.5th 814, 860 (*King & Gardiner Farms*); *POET v. State Air Resources* Board (2013) 218 Cal.App.4th 681, 738.)

> UC argues that MM-HYD-1 includes these enforceable performance standards:
>
> (a) the stormwater runoff rate and volume from the CPHP shall not exceed predevelopment conditions for the 1- and 2-year, 24-hour design storm; and
>
> (b) that the total volume of stormwater discharges from Parnassus Heights in wet weather is decreased by an amount sufficient to offset flows from any increase in impervious surfaces and any increases in wastewater discharges as a result of the CPHP. (AR 6599-601; AR 222-24.)

(ROB 33:20.) UC is incorrect because both measures require additional analyses, *post-approval*, to determine "predevelopment conditions for the 1- and 2-year, 24-hour design storm" and the magnitude of the decrease in "total volume of stormwater discharges" required to fully offset increases in stormwater *and* wastewater discharges. The analyses may lead to enforceable performance standards at some point, but to defer the formulation of mitigation the EIR must provide enforceable performance standards before approval. This EIR fails that test. Moreover, MM-HYD-1 fails to meet the other requirements for deferring the formulation of mitigation, *i.e.*, whether it is impracticable to develop mitigation during the CEQA process and there is evidence that future mitigation is feasible. (POB 30:2.)

D. The EIR Fails to Analyze Transit Delay Impacts

Petitioners explained that the EIR fails as an informational document because it does not analyze transit capacity impacts. (POB 31-34.) UC now asserts: "Substantial evidence supports UC's less than significant determination, and Petitioners have not met their burden to prove otherwise." (ROB 35.) This response is nonsensical because the EIR contends that transit capacity is not a CEQA issue and never made a significance determination that could be reviewed for substantial evidence. (AR 6120.) Whether transit capacity is within the scope of CEQA analysis is a question of law reviewed de novo. (*City of Marina v. Board of Trustees of California State University* (2006) 39 Cal.4th 341, 355 (*City of Marina*.)

1. The EIR was Required to Analyze Transit Delay

UC asserts that petitioners failed to address how delay in transit would conflict with other programs, plans, ordinances, or policies that address transit. (ROB 35:16-17.) That is untrue. Petitioners provided several citations to both San Francisco's Transportation Impact Analysis Guidelines and OPR's Technical Advisory on Evaluating Transportation Impacts in CEQA (OPR Technical Advisory). (POB 32-34.) Both provide directives that should be considered in the EIR. (Guidelines, § 15064.3 (a).)

When a lead agency is evaluating a project's transportation impacts, "Other relevant considerations may include the effects of the project on transit and non-motorized travel." (*Ibid.*)

UC misquotes the OPR Technical Advisory to argue that transit capacity is not a CEQA issue: "...that document states: 'increased ridership should not be considered an adverse effect, *even if it results in increased travel times*...' (ROB 36:10-12, italics added.) The Technical Advisory, however, does *not* include the above-italicized language. (AR 34406.) UC's attempt to insert this language into the quote falsifies OPR's guidance because the referenced paragraph is silent on whether increased transit delay is a project-level impact, and the next paragraph indicates that increased delay should be addressed as cumulative impact. (POB 33:11-15.) UC does not address OPR's assertion that increased transit delay may "cause a cumulative impact by requiring new or additional transit infrastructure." (AR 34406.)

The opening brief recites evidence in the record that demonstrates the need for additional analysis regarding transit. (POB 32:1-10.) UC responds by quoting the EIR Appendix: "With implementation of the CPHP, the campus site would have both more locations and capacity for passenger loading to occur," and that "loading supply for the campus site is expected to be greater than [transit loading] demand for most of the day." (ROB 35:13-16.) UC omits the remainder of the quote:

> [A]lthough passenger loading supply for the campus site is expected to be greater than demand for most of the day, there may be peak passenger travel periods where demand, either for the campus site overall, or for specific locations is greater than supply. During these periods there would be a higher chance of delay to transit or a reduction in access to transportation facilities.

(AR 3517.) The EIR Appendix does not refute that the CPHP would increase transit delay, much less that transit delay itself falls outside the scope of CEQA.

UC next cites Guidelines section 15064.3(b)(1) to argue that CPHP effects on transportation are presumed less than significant because it is within a half mile of "several major transit stops." (ROB 35:22-25.) This is irrelevant to whether transit capacity is within the scope of CEQA review. Also, any presumption provided by subdivision (b)(1) pertains to vehicle miles travelled (VMT), not the "effects of the project on transit," which is the issue here addressed in subdivision (a)(1). Finally, the Guideline provides only that this is "generally" the case. (Guidelines, § 15064.3 (b)(1).) If this presumption is applied uniformly, there would seldom be a need to address transportation impacts in the City, served extensively by public transit. City guidelines for analyzing transportation impacts under CEQA confirm this is not the case. (AR 980-1008.) They include impacts to transit delay as a CEQA issue. (AR 999.)

UC dismisses the import of the City's CEQA transportation guidelines, calling them "immaterial because the City is not the lead agency and UC is not subject to its thresholds." (ROB 36:6-7.) The statement is directly contrary to the EIR's representation that its transportation analysis is "[c]onsistent with the CEQA Guidelines and the SF Guidelines." (AR 4199.) Regardless, UC's refusal to establish a significance threshold for transit capacity impacts cannot allow its EIR process to ignore substantial evidence of an environmental impact. (*Amador Waterways, supra*, 116 Cal.App.4th at 1109.)

2. Transit Delay may Indirectly Impact Vehicle Miles Traveled

UC mischaracterizes petitioners' argument that impacts to transit capacity could create indirect impacts to VMT that remain unanalyzed. (POB 34:9-10.) UC provides several citations to the effect that the EIR analyzed VMT and substantial evidence supports the analysis. (ROB 37:2-3.) However, the EIR did not analyze transit capacity impacts, including potential increased transit capacity that would indirectly contribute to VMT. (AR 6120.) In fact, UC acknowledges that the EIR "assumed that 'the share of travel by public transit [would] remain the same or be slightly reduced from current levels.'" (ROB 37: 6-7.) Actual analysis of impacts on transit capacity could have required the EIR to abandon this assumption. (POB 33:26-34:10 [fair argument that transit delay from the CPHP may, in turn, increase VMT].) Thus, the EIR fails to analyze indirect impacts on VMT. (Guidelines, § 15126.2 (a).

E. The EIR Fails to Adequately Analyze and Mitigate Construction Noise Impacts

1. The EIR Fails to Adequately Address Potential Health Impacts

While construction of the CPHP would last three decades, UC argues that "occasional noise level of up to 76 dBA" would occur only "over several months of activity." (ROB 38:17-18.) UC's single-page AR citation provides no explanation. (AR 1960.) It is belied by UC's CalEEMod inputs, which assume 4.5 years of construction for the New Hospital (AR 2530), 3 years/10 months for the RAB (AR 2589-90), 11 months for Aldea Housing (AR 2502), and 9 months for the Irving Street Arrival (AR 2562). This translates to about ten years of construction for the "first phase" projected from March 2022 (AR 2562) to December 2029 (AR 2530). The EIR explains that "generally comparable" noise levels would occur for the next 20 years. (AR 1951-52). UC's claimed "several months of activity" is false.

UC claims that the EIR analyzed impacts of construction noise as "significant and unavoidable ..." (ROB 39:13-14.) But the four pages relied on do not discuss related human health impacts. (AR 1950-53.) Although the EIR was certified after the Supreme Court ruled in *Sierra Club v. County of Fresno* (2018) 6 Cal.5th 502 (*Sierra Club*) in 2018, discussion of health risks from construction noise is

in one paragraph that is detached from and plays no role in the significance determination for NOI-1. (AR 1960.) As in *Sierra Club*, the EIR provides a discussion of the human health impacts from noise levels, but fails to correlate those noise levels to project emissions for purposes of public disclosure or assessment of significance. UC's statement that its "EIR identifies the health impacts associated with noise caused by construction activities, the noise levels at which those health impacts may occur, and describes the noise levels associated with CPHP construction activities" is false. (ROB 40: 9-11.)

The EIR's failure to correlate noise to health impacts is demonstrated by two simple questions:

(i) What noise levels and exposure periods are associated with "decreased performance of cognitive tasks" or "physiological effects such as hypertension and heart disease"? (ROB 39:20-23.)

(ii) If "few people are seriously annoyed by activities with noise level below 55 dBA," (ROB 39:25-26), what level causes most people to be annoyed?

These questions are critical since residents would be exposed to many years of construction noise at levels up to 80 dBA. (AR 1956.) The EIR fails to provide answers. (*Laurel Heights I, supra,* 47 Cal.3d at 405 [requiring "detail sufficient to enable those who did not participate in its preparation to understand"].) Rather than addressing likely health impacts at lower noise levels, the EIR focuses on "pain and hearing damage" that result at "120dB and 140 dB respectively." (AR 1960.) The EIR also fails to consider if hypertension, heart disease, decreased performance of cognitive tasks, and serious annoyance would constitute significant impacts. (*Amador Waterways, supra*, Cal.App.4th at 1108–09.)

UC argues that the EIR's analysis is saved as it "applies the standards established in the City's Police Code and General Plan...and the daytime construction noise criteria of the Federal Transit Administration." (ROB 38:19-21.) However, neither the City's noise ordinance (AR 31234-82) nor the FTA manual (AR 32212-27) indicate that their respective standards consider health impacts or correlate noise levels to health risks. Further, as explained below, the EIR does not apply these standards.

2. Mitigation for Construction Noise is Inadequate

UC first argues that MM NOI-1b "commits UC to restricted hours," and then acknowledges that MM NOI-1b allows exceptions. (ROB 40:24-27.) While it would minimize the exceptions to "rare circumstances ... such as large concrete pours," NOI-1c provides no limitation. (AR 1476, 1953.) "Rare circumstances" are defined neither as to their nature or the frequency of occurrence. (*Ibid.*)

UC next argues that "there is nothing vague about 'restricting work to smaller time windows, condensing the overall duration of nighttime work to the degree feasible, and erecting temporary barriers

to shield the short-term nighttime activity.'" (ROB 41:2-4.) Although quoted in the opening brief, UC ignores *King & Gardiner Farms, supra*, 45 Cal.App.5th at 858, which explains that the "terms 'increase' and 'reduce'— even though preceded by the mandatory term 'shall' and modified by the phrase 'to the extent feasible'— are not specific performance standards." UC provides no definition or performance standard for "smaller time windows" or "condensing the overall duration" of nighttime construction. Similarly, MM NOI-1b provides no standard for either the design of the "temporary barriers" or the performance of their noise shield.

Finally, UC points to "a *program*-level analysis and mitigation measures," requiring preparation of a future "Noise Control Plan." (ROB, 41:10-15.) This does not cure the defective *project*-level analysis and mitigation for the CPHP's "initial phase" construction. (AR 1948.) Further, any future "noise control plans" are to be approved "by UCSF" and not a regulatory agency, if construction noise "is consistent with the standards set forth in the City's Noise Ordinance." (AR1952.) The EIR's conspicuous use of the phrase "consistent with" appears shorthand for disclaiming commitment to comply with the City's standard, as the EIR explains: "Although UCSF is not subject to the noise ordinance, it *strives* to be consistent with it to the extent feasible." (AR 1530, italics added.) Generalized admonitions to operate more quietly "where feasible" or "wherever possible" are inadequate mitigation. (*Sierra Watch v. County of Placer* (2021) 69 Cal.App.5th 86, 110.) "This language, in effect, only tells construction contractors to be quieter than normal when they can. Although that may be good neighborly advice, it is not sufficient as a mitigation measure." (*Ibid.*) The same is true here, where neighbors would be exposed to significant construction noise over decades.

F. The EIR Fails to Adequately Analyze Historic Resource Impacts

1. UC Cannot Approve Demolition Based on a 'Policy Decision'

UC argues that it has discretion to find that retaining one or more historic buildings is infeasible based solely on a "policy decision." (ROB 41:20-42:26.) UC relies on *Sacramento Old City Association v. City Council* (1991) 229 Cal.App.3d 1011, 1018 (*SOCA*) for the proposition that courts must not "substitute their own opinions as to what constitutes wise public policy." Yet *SOCA* was generally discussing the substantial evidence standard for agency findings, not whether otherwise-feasible mitigations or alternatives to reduce significant impacts can be ignored based on declared 'public policy." (*Ibid.*) Under UC's view, any agency could approve demolition of historic resources by stating a policy preference for new versus historic buildings. That is assuredly not a proper CEQA interpretation

of "feasibility," and it is inappropriate here where UC has substantial properties in the City, unsupported verification of space needs, and great flexibility as to where to locate research and hospital facilities.

Feasibility is a question of fact, not "policy." UC's finding that avoidance of demolition is infeasible is not supported by substantial evidence. The finding must turn on facts as to whether the project could be accomplished with the identified mitigations or alternatives. (POB 19:8.) The historic resources at Parnassus are capable of being rehabilitated, as UC conceded in its 2014 Plan and EIR.

CEQA's "substantive mandate" requires that an agency not approve a project "as proposed if there are feasible alternatives or mitigation measures that would avoid or substantially lessen the adverse environmental effects." (*Stockton Citizens for Sensible Planning v. City of Stockton* (2010), 48 Cal.4th 481, 498; Guidelines, § 15092(b)(2)(A); POB 66:17.) UC unlawfully ignores the substantive mandate, contending that its policy decision to change land uses at Parnassus led it to consider and reject several alternatives that would have retained one or more historic buildings, and that is enough. (ROB, 42:2-21.)

As the California Supreme Court held in *City of Marina*, *supra*, 39 Cal.4th at 368-69, an agency cannot "proceed with a project that will have significant, unmitigated effects on the environment, based simply on a weighing of those effects against the project's benefits, unless the measures necessary to mitigate those effects are truly infeasible." Policy and public benefit considerations do not arise in determinations of feasibility, but only when an agency approves a project because its overriding benefits render *unavoidable* significant impacts "acceptable." (Guidelines, § 15093.)

2. The DEIR Fails to Evaluate the Campus as a Historic District or Area

UC contends that "the EIR has sufficient detail to provide an informed reader with the background necessary to understand (1) the *historic resources* that were evaluated, (2) those that may be present and were not evaluated before publication of the EIR, and (3) potential impacts of the CPHP." (ROB 19, italics added.) However, the only *historic resources* that the Draft EIR evaluated were individual buildings, plazas, and murals. The campus was not evaluated as a unified *historic resource* in its own right as a "historic district" or "historic area." (POB 41:16-21.) This is important because a substantial alteration to a historic district as a whole has a separate significant impact for which mitigations and alternatives must be identified and applied.

In response to comments, the FEIR contends but provides no supporting facts that the EIR adequately evaluates the campus as a historic district. (POB 41:22-27.) UC points to a sentence in Carey & Co.'s 2011 report suggesting that the possibility of a historic district at the Parnassus campus was considered but that the researchers "*did not find sufficient evidence* to identify an historic district." (ROB

43:24-44:5, italics in original.) Yet the only relevant reference in the report is a "negative pregnant" — an inference — because Carey & Co. surveyed all UCSF campuses for historic resources and *reported* only one potential historic district at Third Avenue. (AR 40134.)

Carey & Co. does not offer a word of explanation as to whether the Parnassus campus is or is not a potential "historic district" or "historic area." An inference that the issue was evaluated does not meet CEQA's requirements for public disclosure. Even where an EIR's environmental conclusion is correct, "there must be a disclosure of the 'analytic route the ... agency traveled from evidence to action.'" (*Sierra Club, supra,* 6 Cal.5th at 513, quoting *Laurel Heights I, supra*, 47 Cal.3d at 404 and *Topanga Assn. for a Scenic Community v. County of Los Angeles* (1974) 11 Cal.3d 506, 515.)

Moreover, while the 2011 Carey & Co. report is cited in the DEIR (AR 1757), it is not part of the EIR or attached as an appendix. "The data in an EIR must not only be sufficient in quantity, it must be presented in a manner calculated to adequately inform the public and decision makers... '[I]nformation scattered here and there in EIR appendices' or a report 'buried in an appendix,' is not a substitute for 'a good faith reasoned analysis.'" (*Vineyard Area Citizens, supra*, 40 Cal.4th at 442.) The EIR's failure to evaluate the whole campus as a potential historic resource fails to satisfy CEQA mandates for public disclosure and evaluation of impacts and feasible mitigation.

G. The EIR Fails to Adequately Assess Impacts from Air Emissions

1. The EIR Piecemeals Analysis of Health Impacts from TAC Emissions

The EIR piecemeals its analysis of human health impacts from TAC emissions to minimize significant impacts on neighbors' cancer risk. The critical issues are: (i) whether construction and operational TAC emissions should be segregated for EIR analysis, and (ii) whether the project-level significance threshold of 10 increased cancer risks applies rather than a cumulative threshold of 100.

(a) The EIR Fails to Address Cancer Risks from all TAC Emissions

In response to expert testimony and guidance from the California Office of Environmental Health Hazard Assessment (OEHHA) stating that a health risk assessment should include both construction and operational TAC emissions, UC pronounces a "disagreement among experts" as if that allows it to freely rely on its own methodology to determine whether cancer risks are significant. (ROB 47: 22-28.) UC fails, however, to identify any expert support for the EIR's methodology of segregating

health risks from TAC emissions. (ROB 47:26.)[5] BAAQMD's guidance is in accord with OEHHA, and provides in that "Some proposed projects would include both permitted and non-permitted TAC sources. For instance, a manufacturing facility may include some permitted stationary sources and also attract a high volume of diesel trucks and/or include a rail yard. *All sources should be accounted for* in the analysis." (AR 15733, italics added.) UC's failure to identify any expert support for its competing "methodology" is fatal to its defense.

This is not an issue of "competing experts" that entitles UC to deference. The EIR's failure to account for mobile-source TAC emissions for the entire CPHP, or any operational emissions from the New Hospital, is based on a legal posture that "future projects…will undergo separate review" rather than any identifiable expert evidence. (POB 43:19-23.) The opening brief responds directly[6] to UC's legal position, explaining that EIR analysis cannot be deferred where, as here, the record includes sufficient information allowing study of an impact. (POB, 43:24-44:9.) UC ignores this argument, including the opening brief's discussion of mobile-source diesel emissions and New Hospital operational emissions that were available for calculation of resulting TAC emissions. (ROB 5-48.)

(b) The CPHP is a Single Project for Purposes of CEQA Analysis

The opening brief explains that the EIR minimized TAC health risks by treating each infrastructure element of the CPHP as a separate CEQA project, and even purported to distinguish construction and operational TAC emissions. (POB 44:9-19.) UC's only discernible response is that "the only overlap between construction emissions and operational emissions would be cumulative ... because emissions from operations (generators and vehicles) cannot occur until construction of a building is complete." (ROB 47:8-11.)[7]

That operational emissions occur later than construction emissions means that they are "serial" or "consecutive," but not that they are "cumulative." It is absurd to suggest that construction of a building somehow has independent utility from operation of the same building. (*Banning Ranch Conservancy v. City of Newport Beach* (2012) 211 Cal.App.4th 1209, 1223.) While UC now ignores this

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[5] UC cites a single page from the record supporting its assertion, and that page is unrelated to TAC emissions. (AR 6979.) The FEIR's response to PNC's expert references no expert analysis or evidence supporting UC's methodology. (AR 6012-13.)

[6] UC falsely asserts that "Petitioners . . . ignore that the EIR indicates that the New Hospital and Future Phase Projects will undergo separate environmental review." (ROB 47:18- 19)

[7] UC concedes that these different buildings have no independent utility in its recitation of the "interrelated sequence of projects." (ROB 16:2-13.)

point, the record is replete with evidence that the EIR consistently treated the CPHP as a single project. (See, e.g. AR 1647, 1659 [criteria air emissions], 1786-1787 [energy], 2050 [transportation].) In any event, the scope of a project under CEQA is a legal question for the Court without deference to the lead agency. (*Stopthemillenniumhollywood.com v. City of Los Angeles* (2019) 39 Cal.App.5th 1, 15.) The EIR's unique approach to piecemeal the CPHP's various TAC emission sources in this manner unlawfully minimizes the CPHP's significant cancer risk impacts on UC's neighbors.

2. The EIR Incorrectly Applies Cancer Risk Thresholds of Significance

UC first argues, incorrectly, that the claims arising from the EIR's erroneous use of cancer risk thresholds of significance were not exhausted in the administrative process. (ROB 48:16.) They were exhausted by comments (POB, 45:28; 51:28, citing AR 890-96, 898-944, 6069-74, 5862-64; 5903-06; 5913-18; 6137-43) and the Final EIR responded. (AR 6076-6083.)

UC argues that it and other agencies have used the same cancer risk thresholds for years. (ROB 48:21.) This is irrelevant. The EIR failed to apply these thresholds to the environmental baseline established in the EIR to determine significance. Instead, it applies the thresholds without regard to the magnitude of baseline cancer risk. Also, there is no record evidence that UC and other agencies in fact have applied the thresholds in this manner for years. Even if they had, repeating a legal error would not make it legally correct. The emperor repeatedly parading without clothes remains naked.

(a) UC Failed to Adopt Its Thresholds in a Public Rule-Making Process

UC fails to defend this claim argued at POB 45:4. Judgment and a writ should issue.

(b) The EIR Fails to Adequately Describe Existing Cancer Risk Conditions

UC defends the EIR's use of the 100 in one million cancer risk criterion by arguing that "the predicted existing risk levels attributable solely to diesel particulate matter (DPM) are not a factor in the impact assessment of the EIR." (ROB 49:8.) This argument has three flaws. First, the idea that "existing risk levels are not a factor in the impact assessment" is contrary to CEQA case law requiring that the project-caused impact (increased risk) be added to existing conditions (existing risk). (POB 46:17-27.) Second, UC's argument implies that the EIR is exempt from CEQA's requirement to describe baseline conditions as of the Notice of Preparation date. UC cites no authority, and there is none. Third, UC's assertion that existing risks "attributable solely to DPM are not a factor in the impact assessment of the EIR" is a red herring. The claim is that existing risks attributable to both DPM and TAC are a factor in the impact assessment and need to be described in the EIR.

(c) The EIR inadequately analyzes Project and Cumulative Cancer Risk

The EIR's rationale for applying BAQMD's project-level and cumulative cancer risks thresholds were addressed in the opening brief. (ROB 49:14-50:25; POB 46:9-51:14.) UC now pronounces that "Petitioners' argument that the significance threshold should account for the existing baseline cancer risk would require virtually every CEQA project to prepare an EIR ... because the ambient risk exceeds the standard of significance; it would be absurd for CEQA to require this result." (ROB 50:25-28.)

UC thus concedes the gravamen of petitioners' claim, that in finding the CPHP's project-level and cumulative cancer risk to be less-than-significant, the EIR applied BAAQMD's thresholds in a manner that ignores the baseline's severely adverse cancer risk conditions. UC argues that "BAAQMD's threshold ... also does not require that existing background emissions be considered in evaluating the significance of a project's incremental emissions." (ROB 50:21.) Assuming arguendo that this is correct, it is unavailing since BAAQMD has no more license to ignore CEQA's requirements than does UC.

Moreover, under UC's approach there is no upper limit to air pollution that would require an agency to find that a project's impact is significant, because as long as each project stays under the 10 per million threshold, air could become unbreathable without a finding that any project would have a significant impact. CEQA does not allow such "creeping incrementalism" to remain undisclosed.

Instead of explaining why this approach does not violate CEQA, which it does (POB 46:9-51:14), UC makes a policy argument that courts should recognize an exception, implying that otherwise every project that would increase cancer risk above a preexisting severely degraded baseline would have a significant adverse effect, thereby necessitating the preparation of an EIR. UC's parade of horribles is incorrect and addressed to the wrong branch of government. It is incorrect because a lead agency's legal obligation is to determine if an increase in cancer risk is individually significant or "cumulatively considerable." (Guidelines, §§ 15065(a)(3); 15130(a); 15355; *CBE v. Resources, supra*, 103 Cal.App.4th at 120 [the 'one [additional] molecule rule' is not the law"].) The EIR *must explain*, based on facts rather than policy and what other agencies say, why worsening severely degraded conditions is individually significant or "cumulatively considerable." The EIR fails to do so.

UC's policy argument is overblown because CEQA has many exemptions for projects in urban areas even if they may worsen poor air quality. (§§ 21080.42; 21081.2; 21155.1; 21155.11; 21159.21; Guidelines, §§ 15301-15304; 15322.) UC's policy argument is addressed to the wrong branch of government because the Court may not rewrite a statute to suit UC's desire.

UC also generally argues that a 47-page technical document (AR 16491-537) not included in the EIR finds that the Parnassus campus is not in an Air Pollutant Exposure Zone (APEZ.) (ROB 51:1-9.) UC does not explain why this is relevant. Regardless, the EIR fails to disclose why worsening severely degraded ambient risk (conceded as above 100 in one million) is not individually significant or cumulatively considerable. (*Vineyard Area Citizens, supra*, 40 Cal.4th at 442 ["[I]nformation 'scattered here and there in EIR appendices' or a report 'buried in an appendix,' is not a substitute for 'a good faith reasoned analysis'"]; 443 ["That a party's briefs to the court may explain or supplement matters that are obscure or incomplete in the EIR, for example, is irrelevant"].)

Regarding cumulative cancer risk, UC relies on the FEIR's response, that BAAQMD directs that a project would have a cumulatively considerable impact if all sources within a 1,000-foot radius plus the project exceeds an excess cancer risk level of more than 100 in one million. (ROB 51:20.) The response is inadequate. (POB 51:7-14.) The math is simple. Baseline risk in the area studied is above 100 in one million. The project would make that worse regardless of how far receptors are from sources of pollution or whether the CPHP "excess risk" exceeds another 100 in one million. Whether other agencies find that "acceptable" is not a relevant or legal basis to find the impact less than significant.

H. The EIR Inadequately Analyzes Visual Impacts

1. The EIR's Analysis of Impacts AES-1 and -2 Omits Essential Information

With two caveats, the opening brief fully anticipates UC's opposition regarding the validity of the EIR's analysis of Impacts AES-1 and AES-2. Those arguments are not repeated here. (POB 51-54.) UC repeats the EIR's unfounded assertion that it can reduce significant impacts by changing the baseline, in this case by amending the LRDP's regulations that minimize such impacts. (POB 52:1-19.)

UC's only new argument is to claim disagreement that "the threshold of significance should be changed to 'visual impacts as perceived from surrounding neighborhoods' rather than the selected criterion listed in Appendix G." (ROB 53:25, n.16.) UC misconceives the claim. It is not that a threshold of significance should be "changed," but that the EIR must assess the impact because otherwise it commits legal error by deploying its thresholds of significance to foreclose consideration of substantial evidence supporting a fair argument of significant impact. (POB 52:20.)

2. UC Erroneously Relies on Public Resources Code Section 21099

UC's discussion of the section 21099 exemption for aesthetic impacts fails to interpret CEQA "in such manner as to afford the fullest possible protection to the environment within the reasonable

scope of the statutory language.'" (*Laurel Heights I, supra,* 47 Cal.3d at 390.) Also, exemptions from CEQA "are narrowly construed." (*San Lorenzo Valley Community Advocates for Responsible Education v. San Lorenzo Valley Unified School Dist.* (2006) 139 Cal.App.4th 1356, 1382.)

UC's argument that the definition of "residential or mixed-use residential project" in section 21159.28 (d) does not provide guidance for defining these terms in section 21099 ignores their common parentage. Section 21099 was enacted to encourage transit-oriented, infill development to reduce greenhouse gases announced in Senate Bill No. 375, "one in a series of executive, legislative and administrative measures enacted to reduce greenhouse gas emissions ..." (*Covina Residents for Responsible Development v. City of Covina* (2018) 21 Cal.App.5th 712, 725) Section 21159.28 was enacted pursuant to Senate Bill 375. Since both statutes were enacted to further goals of SB 375, the provisions should be read *in pari materia*. (*Smith v. LoanMe, Inc.* (2021) 11 Cal.5th 183, 190.) Thus, section 21099's CEQA exemption for aesthetic impacts attributable to a residential or mixed-use project cannot reasonably be interpreted to apply to this EIR.

I. The EIR Defers Formulating Mitigation for Biological and Visual Impacts

UC denies that the EIR improperly defers formulation of mitigation measures MM BIO-2b and MM AES-3, treating it as a challenge to whether the EIR's conclusion that impacts will be less than significant is supported by substantial evidence. UC misconceives the nature of the claim, which is a procedural challenge to the EIR's assumption that it meets criteria for deferral. "The existence of substantial evidence ... is not relevant when one is assessing a violation of [CEQA's] information disclosure provisions." (*Communities for a Better Env't v. Richmond, supra*, 184 Cal.App.4th at 82.

J. The EIR Fails to Assess Shadow Impacts on Surrounding Neighborhoods

UC incorrectly argues that "[a]nalysis of shadow impacts is not required under CEQA." (ROB 57:18, citing Guidelines, Appendix G.) This argument is incorrect because CEQA requires analysis of all project-caused physical changes to the environment (§§ 21100, 21002.1, 21065) and loss of sunlight is unquestionably a physical change. Also, the fact that Appendix G does not mention "shadow" is irrelevant; its preamble expressly provides that "[s]ubstantial evidence of impacts not listed on this form must also be considered."

As with visual impacts, UC misconceives the issue. It is not that a threshold of significance should be "changed" but that the EIR unlawfully fails to analyze the significance of shadow impacts on

neighborhood life outside of city parks despite substantial evidence supporting a fair argument that such impacts may be significant. (*Amador Waterways, supra*, 116 Cal.App.4th at 1109.)

K. Deferral of Formulation of Mitigation for Significant Wind Impacts is Unlawful

UC implies that labeling the CPHP EIR a "program" EIR gives it a free pass to defer the formulation of mitigation for significant wind impacts. This is incorrect. The level of specificity for a program EIR is determined by the nature of the project and the 'rule of reason' and not by semantic labels. (*Citizens for a Sustainable Treasure Island v. City and County of San* Francisco (2014) 227 Cal.App.4th 1036, 1052.) A program EIR must provide "decision makers with sufficient analysis to intelligently consider the environmental consequences of [the] project." (*Ibid*; *Cleveland National Forest Foundation v. San Diego Ass'n of Governments* (2017) 17 Cal.App.5th 413, 426 (*Cleveland*).)

UC ignores extensive authority in the opening brief addressing the EIR's improper deferral of the formulation of mitigation for significant wind impacts. (POB 30; 36:25; 57:9 ["As discussed, to defer mitigation until after project approval it must be impracticable to achieve in the present and the agency must adopt performance standards. UC violates both criteria for deferral."].) The opening brief did not repeat these citations for each mitigation deferral claim.

UC's defense consists mostly of undisputed points. For example, the parties assume that wind tunnel testing is required for accurate prediction of wind speeds and that final building designs are necessary for accurate wind tunnel tests. Petitioners' claim is that the EIR presents no evidence that it is impractical for UC to develop final building designs before approving the CPHP; thus allowing wind tunnel testing. UC ignores this claim and cites to no such evidence.

Similarly, UC argues that MM AES-4 includes a specific performance criterion, *i.e.*, San Francisco's wind hazard threshold of 26 mph. Petitioners do not dispute that MM AES-4 references this criterion. The legal problem is that MM AES-4 does not mandate compliance with this criterion. (POB 58:12; *Cleveland, supra*, 17 Cal.App.5th at 440-443 ["[i]mpermissible deferral of mitigation measures occurs when an EIR puts off analysis or orders a report without either setting standards or demonstrating how the impact can be mitigated in the manner described in the EIR"]. UC fails to defend this claim.

UC argues that MM AES-4 does not use an incorrect, post-project baseline to determine the success of wind mitigation, contending that the "baseline" under CEQA has nothing to do with measuring the success of mitigation. (ROB, 60:15; POB 59:6.) This reflects a deep misunderstanding of how CEQA works. The environmental setting (i.e., pre-project baseline) is the condition of the

environment against which an EIR evaluates project changes for environmental harm. (*Communities, supra*, 48 Cal.4th at 315). For purposes of measuring the success of mitigation, changing the baseline to reflect conditions after portions of the project are built could partially or completely obscure the magnitude of the change caused by the project. The updated baseline would reflect more degraded environmental conditions than the pre-project baseline. The Court should reject UC's absurd argument.

L. GHG Emissions must be Analyzed and Mitigated

UC relies heavily on the purchase of voluntary carbon offsets to support the EIR's determination that greenhouse gas (GHG) emissions would be less than significant. (AR 1854-55 [UC to purchase roughly 59,000 metric tons of CO_{2e} a year, approximately 95 percent of the increased emissions from the buildout of the CPHP].) UC relies on this strategy because it is less expensive than lowering emissions. (AR 42215.) But UC's proposed voluntary offsets fail to meet CEQA's requirements that mitigation measures be "fully enforceable through permit conditions, agreements, or other legally binding instruments." (Guidelines, § 15126.4 (a)(2).)

UC first argues that *Golden Door Properties, LLC v. County of San Diego* (2020) 50 Cal.App.5th 467 (*Golden Door*) is limited to its facts and should not be relied upon. (ROB 62:1-4, 14-15.) *Golden Door* states, "Our decision is not intended to be, and should not be construed as blanket prohibition on using carbon offsets — even those originating outside of California — to mitigate GHG emissions under CEQA." (*Id.* at 483.) UC overreaches, as *Golden Door*'s limiting language reflects adherence to the principle of judicial restraint. The practice of distinguishing one case from another is based on the assumption that appellate rulings are limited to the facts of each case. But petitioners' claim is not premised, as UC states, on a "blanket prohibition on using offsets." Far from it, the material facts in *Golden Door* are substantively identical to the instant case and compel the same outcome.

UC argues that *Golden Door* is distinguishable because "MM GHG-1c commits UC to monitoring emissions annually and acquiring carbon offset credits in conformance with CARB guidance." (ROB 62:16-19.) UC fails to explain what is meant by "offset credits in conformance with CARB guidance." It cites only three pages from the EIR to support this assertion, and the only possible interpretation from them is that "Offset credits shall be third-party verified by a major registry recognized by CARB ... UCSF will purchase CARB conforming national offset credits registered with an approved registry." (AR 1858.) UC fails to acknowledge that CARB approval is rejected as a basis for enforceability. (*Golden Door, supra,* 50 Cal.App.5th at 511.) Further, UC relies on the same

registries as the agency in *Golden Door*. (Compare AR1858-1859 [discussion of CPHP's voluntary carbon offset registries] with *Golden Door*, *supra*, 50 Cal.App.5th at 570-571 [discussion of registries].)

UC next argues that MM-GHG-1c is distinguishable from *Golden Door* because the EIR mentions the use of protocols whereas the mitigation measure in *Golden Door* does not. (ROB 62:23-27.) This simplistic argument is unavailing because UC *fails to require CARB approval for the protocols*, which is necessary for enforceability. (AR 1859.) MM-GHG-1c only requires that "protocols of each registry, and UC's own internal screens, shall be used to demonstrate that the carbon offset credits provided are real, permanent, additional, and have been independently verified as adhering to its applicable project protocols." (*Ibid.*) This is inadequate, as *Golden Door* explains:

> [R]egardless of how the voluntary protocols are developed, [C]ARB staff must determine whether the voluntary protocol should be developed for use in the Cap-and-Trade Program and if so, to conduct its own rulemaking process.... *This process ensures that any voluntary protocol ... demonstrates the resulting reductions meet the offset criteria in [Assem. Bill No. 32]* ... Protocols developed by the voluntary programs are not Compliance Offset Protocols." (Italics added.)

(*Golden Door*, *supra*, 50 Cal.App.5th at 511-12.)

As in *Golden Door*, UC fails to require CARB approval for these protocols, or information regarding the protocols. (AR 1859.) Without additional requirements, MM-GHG-1c is unenforceable. The similarities to *Golden Door* are striking and compel the same result.

1. MM-GHG-1c is Impermissibly Deferred

There are two ways in which MM-GHG-1 is impermissibly deferred. First, offset protocols are undefined. (POB 61:1-5.) Second, offset locations are unspecified. (*Ibid.*) UC states that voluntary offsets would "prioritize" local and in-state offsets and, if no such offsets are "available," UC would purchase out-of-state offsets. (ROB 63:3-11.) *Golden Door* found the mitigation measure impermissibly deferred where it "contains no objective standards for determining whether any particular offset project is 'available' and 'financially feasible' in one location or another." (*Golden Door, supra*, 50 Cal.App.5th at 520.) As in *Golden Door*, UC fails to identify any objective standard for when local or in-state offsets are "available." (ROB 63:4–11.) Apparently attempting to distinguish *Golden Door*, UC states in a footnote that "it is not possible or feasible to specify exactly where future credits will be obtained." (ROB 63:27 fn. 22.) UC fails to explain, however, why requiring an objective standard for "availability" would be equivalent to "specify[ing] exactly where future credits will be obtained." Again, the facts here are substantively identical to *Golden Door*, and compel the same finding of improper deferral.

2. The EIR Relies on the CARB 2017 Scoping Plan to Analyze GHG Impacts

There are two flaws in the CPHP's use of the CARB's 2017 Scoping Plan. First, the 2017 Scoping Plan standard relied upon is not applicable to the UC. (POB 62:10-13.) Second, the CPHP's reliance on "zero net increase" conflicts with UC's own policies. (POB 61:21-62:6.)

In lieu of properly analyzing this conflict as required by CEQA, UC provides a handful of excerpts from the EIR that purport to show that the CPHP is consistent with "UC plans and policies, 2040 Plan Bay Area, CARB's 2017 Scoping Plan Updated, and Executive Order S-3-05." (ROB 63:16-18.) However, UC provides no explanation as to how the CPHP's goal of "no net increase" is consistent with state mandates for emission decreases.

UC's opposition concludes by stating "Petitioners ignore that UC's CNI [Carbon Neutrality Initiative] is more stringent than all state requirements for reduction of GHG emissions, including AB 32, SB 32, and 2017 Scoping Plan." (ROB 64:3-4.) UC's claim is false. The CNI is a carbon neutrality goal that is only half-heartedly entered into by the UC, and bears no relationship to state goals. (AR 41069 [noting that UC is not on track to meet its carbon neutrality goals by 2025].) Further, UC's opposition does not even attempt to argue how the 2017 Scoping Plan's guidance to cities and counties is applicable to UC as a state entity. UC has failed to adequately analyze how implementation of the CPHP is consistent with an applicable plan, policy, or regulation.

M. The EIR fails to Adequately Analyze Energy Conservation

1. Project Level Analysis Fails to Comply with Informational Mandates

A main focus of UC's arguments is to avoid applicable language in the CEQA Guidelines' Appendix F. UC attempts to brush aside a critical element of Appendix F by stating that "Petitioners' argument weakly relies on the aspirational goals listed in the introduction to Appendix F, all of which are still met by the EIR." (ROB 64:15-16.) First, this ignores "the fundamental rule of statutory construction which states that the court should ascertain the intent of the Legislature to best effectuate the purpose of the law. [Citation.] Legislative intent should be gathered from the whole act and applied reasonably to carry out the policy of the legislation. [Citation.]" (*Estate of Coudures* (1984) 151 Cal.App.3d 741, 746.)

The task is eased because Appendix F's policy is expressly stated: "The goal of conserving energy implies the wise and efficient use of energy. The means of achieving this goal include: [¶] (1) decreasing overall per capita energy consumption, [¶] (2) decreasing reliance on fossil fuels such as

coal, natural gas and oil, and [¶] (3) increasing reliance on renewable energy sources." (Guidelines, App. F, § I.) *California Clean Energy Committee v. City of Woodland* (2014) 225 Cal.App.4th 173, 213 (*CCEC*) quoted this Appendix F language to invalidate an EIR that did "not indicate any investigation into renewable energy options that might be available or appropriate for the project." Here, the EIR fails to describe how the CPHP complies with any of the prescribed means to achieve energy conservation: the UC is increasing its reliance on fossil fuels, fails to assess whether its per capita energy consumption is increasing, and fails to require any increased renewable energy in favor of purchasing offsets.

Dismissing these fundamental issues, UC asserts that "CPHP will add about 2.90 million gsf of new building space and thus has to use more energy than the existing 3.92 million gsf of building space." (ROB 64:18-19.) UC fails to explain why this 74 percent increase in building space requires a 116 percent increase in electricity use, 76 percent increase in diesel use, and 61 percent increase in natural gas use. (AR 1779.) These increases suggest that CPHP development would be less energy efficient than the existing campus. (*Ibid.*) While it is possible that a per-capita energy consumption analysis pursuant to Appendix F, section I ("decreasing overall per capita energy consumption") might help explain this troublesome lack of energy efficiency, UC defiantly refuses to perform such analysis. (ROB, 65:11.) This is an informational failure under Guidelines section 15126.2 and Appendix F.

In an attempt to pivot from its excessive unexplained increases in energy consumption, UC points to Title 24 and LEED certifications to posit that "fossil fuel consumption would be reduced." (ROB 65:13.) However, the assumed "reduction" is illusory — both in terms of absolute numbers and in relation to the proposed increased building space. (AR 1779.)

UC expends much effort explaining how "UC is increasing renewable energy sources at all of its locations, including Parnassus Heights," referencing prior actions and contemplated future strategies actions that are neither elements of nor mitigation for the CPHP. (ROB 65:16-26.) Impacts from such unrelated projects are irrelevant, and information scattered about the record does not satisfy the EIR's informational disclosure requirements. (*Vineyard Area Citizens, supra,* 40 Cal.4th 412, 442.)

UC boasts that "the campus is developing *strategies* for adding new renewable generation including rooftop solar systems, and microgrid districts with battery storage." (ROB 65:24-25.) First, developing strategies to apply at some undefined date does not show a "decreas[ed] reliance on fossil fuels." (Guidelines, App. F, § I; AR 35130 ["Renovations and upgrades are recommended across many existing electrical facilities in the next 15 years to maintain business-as-usual operations"].) Second, the

CUP is scheduled "to remain in good operation until 2030-2035." (AR 35131.) UC fails to provide any performance standards to reduce reliance on fossil fuels, a primary path to achieve energy conservation.

UC's brief relies heavily on its goal to meet Title 24 and strive to achieve LEED Silver for new buildings, but does not dispute that these goals may be waived. (POB 65:1-6; ROB 64:21-24; 64:27-65:2 [claiming waivers would be limited to "exceptional circumstances"].) UC also relies on *Tracy First v. City of Tracy* (2009) 177 Cal.App.4th 912, to argue that reliance on building codes is sufficient to address energy impact concerns. (ROB 65:27-28, 66:1-4.) However, as in *CCEC*, UC here fails to provide any analysis regarding the other factors CEQA requires in addition to building code compliance. (*CCEC, supra*, 225 Cal.App.4th at 211; Guidelines, § 15126.2 (b).) It is thus impossible to determine whether changing certain aspects of the project would create a more efficient or less wasteful CPHP.

2. Cumulative Energy Impacts Analysis is Fatally Flawed

CEQA prohibits "drop in the bucket" or "ratio theory" analysis. (*San Francisco Baykeeper v. State Lands Comm.* (2015) 242 Cal.App.4th 202, 223.) UC argues that it only provides comparison to "statewide and regional energy use to provide a frame of reference." (ROB 66:21-23.) This attempted whitewash fails. The EIR dismisses cumulative energy impacts because "given the relatively small percentage of the CPHP's other fuel and energy uses compared to existing fuel and energy use in the region," there would be no adverse cumulative impacts. (AR 3944.) The EIR found a less than cumulatively considerable impact because electricity use would not be "substantial compared to 2018 citywide consumption." (AR 3944.) This is the hallmark of ineffective "drop in the bucket" analysis.

Additionally, the EIR determines that cumulative energy impacts would be less than significant — without reference to a significance standard. (AR 3944.) UC attempts to distinguish *Lotus, supra*, 223 Cal.App.4th 645 because it "does not discuss cumulative impacts" (ROB 65:66:24-27), but then fails to explain how that makes a difference since CEQA requires standards of significance for both types of impacts. (Guidelines, § 15064.) Alternatively, UC purports to create its own standard: "whether 'the collective effect of the project would be to use fuel or energy in a wasteful or inefficient manner.'" (ROB 66:27-67:1.) UC fails to explain how the "collective effect of the project" is comprehensible or provides a meaningful standard for either the cumulative impact or the CPHP's incremental contribution. Further, this confused statement is set forth in a response to comment and not the Draft or Final EIR's analysis of energy impacts. (Compare AR 6114 [response to comment] with 1787-1788 [DEIR] and 3944-3945 [FEIR].) The EIR's failure to identify a significance standard for its cumulative impact analysis of energy is uncorrected.

Conclusion

Petitioners in the three related cases respectfully request this Court's judgment and peremptory writ in the public interest, ordering UC to set aside the CPHP approvals including certification of the EIR, and to revise and recirculate the EIR in compliance with CEQA before reconsideration.

Respectfully submitted,

December 30, 2021

SOLURI MESERVE, A LAW CORPORATION

By: _____
Patrick M. Soluri
Attorneys for Plaintiffs and Petitioners
PARNASSUS NEIGHBORHOOD COALITION
AND CALVIN WELCH

December 30, 2021

LAW OFFICE OF THOMAS N. LIPPE

By: _____
Thomas n. Lippe
Attorneys for Petitioner SAN FRANCISCANS FOR
BALANCED AND LIVABLE COMMUNITIES

December 30, 2021

BRANDT-HAWLEY LAW GROUP

By: _____
Susan Brandt-Hawley
Attorney for Petitioner
YERBA BUENA NEIGHBORHOOD
CONSORTIUM

EXHIBIT 4

Terrell Watt Planning Consultants
1937 Filbert Street
San Francisco, CA 94123
terryjwatt@gmail.com
415-377-6280

September 9, 2020

Richard Drury
Lozeau Drury, LLP
410 12th Street, Suite 250
Oakland, CA 94607

RE: Comments on Draft Environmental Impact Report for Proposed UCSF Comprehensive Parnassus Heights Plan

Dear Mr. Drury,

At your request, I have reviewed the Draft Environmental Impact Report ("DEIR") for the proposed UCSF Comprehensive Parnassus Heights Plan ("Project").[1] My review focused on the DEIR's treatment of:

- **Population and Housing**
- **Growth Inducement**
- **Land Use and Planning**
- **Alternatives**

In preparing these comments, I have reviewed the following information:

1. **Draft Environmental Impact Report for the Plan and Appendices**
2. **2014 LARDP**
3. **CPHP**
4. **1976 Regents' Resolution**
5. **January 16, 2020 Letter from Mayor London Breed to Chancellor Sam Hawgood citing the 2007 MOU and 1987 and 2007 MOU's**

After carefully reviewing the DEIR for the Project I have concluded the DEIR fails in numerous respects to comply with CEQA and to fulfill CEQA's fundamental mandate. As described below, the DEIR violates this law because it fails to analyze adequately the significant environmental impacts of the Project or propose sufficient mitigation measures. Where, as here, the EIR fails

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[1] See Attachment 1 for Watt Qualifications

to fully and accurately inform decision-makers and the public of the environmental consequences of proposed actions, it does not satisfy the basic goals of the statute. Because of the DEIR's numerous and serious inadequacies, the Lead Agency must revise and recirculate the document to permit an adequate understanding of the environmental issues and potential solutions, including feasible mitigation measures and alternatives.

53 cont.

I. Context and Introduction

A. UCSF Should Honor the Space Ceiling and Other Commitments

UCSF should honor its commitment to the space ceiling and to development compatible with surrounding uses at the Parnassus Heights campus by selecting an alternative within the existing space ceiling. The Parnassus Heights campus site, the oldest and largest of the UCSF campuses, is located in among some of the oldest neighborhoods in San Francisco, which are characterized by a mix of unique residential areas ranging from single family to multi-family housing and neighborhood serving commercial districts such as located along Irving and Judah Streets and 9th Avenue. In addition to Mount Sutro Open Space Reserve, several park and open space areas are located near the campus. This area surrounding the Parnassus Heights campus is further characterized by local serving streets plagued with traffic, parking congestion and lack of transit. Approximately 43% of the main campus (exclusive of the Aldea area) borders the Reserve, breaking the City's normal grid pattern and limiting ingress and egress routes to the main campus. The surrounding neighborhoods, like all of San Francisco, also suffer from a lack of affordable housing and available sites to build new housing. Recognizing the unique and constrained location the Parnassus Heights campus occupies, the Regents adopted a sensible "space ceiling" for the campus in its 1976 Regents Resolution, stating in pertinent part:

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> "The total structures within the campus boundaries shall not exceed 3.55 million gross square feet (not including space committed to residential use on Third, Fourth, Fifth and Parnassus Avenues and Kirkham and Irving Streets) and this limit shall be permanent." See Attachment 2.

The Regent's Resolution recognized the transportation problems in the area and committed funds to develop a plan to alleviate transportation problems including traffic, parking congestion and lack of transit. Concern for the impacts of the Project on the neighborhood is an ongoing concern. In a letter to Chancellor Hawgood, dated January 16, 2020, Mayor London Breed, President of the Board of Supervisors Norman Yee and Supervisor Dean Preston note the need for a revised MOU to adopt and formalize arrangements for coordination and consideration of both our interests and inputs in the context of land use approvals, transportation needs and ongoing service provisions, noting the common challenges faced include housing supply, affordability and climate and seismic related risks. See Attachment 3. According to a June 4th Staff Report to the Planning Commission, the Planning Department and UCSF are engaged in ongoing conversations about how to structure a stakeholder process to achieve the Mayor and Supervisor's objectives, expected to culminate in an MOU.

While not part of the objectives or regulations in the UCSF 2014 LRDP, reference is made in the DEIR to the Community Planning Principles including:

- Land Use LU1. Plan for growth and renovations that are substantially consistent with use limitations and height and bulk limitations in the City planning and zoning codes that exist at the time UCSF initiates the site selection process for such growth and renovation projects. The University should consider City planning proposals that are underway. UCSF will endeavor to be consistent with applicable land use plans and mitigation approaches where consistent with UC policy, while respecting specific neighborhood plans and concerns.
- LU3. Ensure that future UCSF development is compatible with physical surroundings in use, scale, and density, and that do not negatively affect surrounding land uses.
- LU10. Work toward compliance with the Parnassus Heights space ceiling and adhere to boundaries for the Parnassus Heights Campus site.

DEIR at page 4.10-3 to 4.10-4.

Although the University is constitutionally exempt from local land use regulation whenever using properties under its control in furtherance of its "educational mission," the University has committed to substantial consistency with local policies where feasible. This dual commitment – to the space ceiling and to adherence where feasible to local policy – is one UCSF should and can honor given the very real constraints to development in the area surrounding the Parnassus Heights campus. There are feasible alternatives to the Project, including a new hospital at Mount Zion, Mission Bay or Hunters Point, that should be fully considered in a revised and recirculated DEIR before the decision is made to break the space ceiling commitment and significantly impacting the surrounding neighborhoods.

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B. The DEIR Should be Revised and Recirculated to Address the Outbreak in December 2019 of COVID 19

The outbreak of COVID 19 was first reported on December 31, 2019 in Wuhan China. The Notice of Preparation (NOP) for the UCSF Parnassus Heights campus was issued January 14, 2020. As described at page 4.0-6 of the DEIR, "[n]ormally, the baseline condition is the physical condition that exists when the Notice of Preparation ("NOP") is published. The NOP for the proposed CPHP was published in January 2020, and the baseline conditions contained in this CPHP EIR are generally taken from this time period. However, the CEQA Guidelines and applicable case law recognize that the date for establishing an environmental baseline cannot always be rigid." DEIR at 4.6-6. UCSF is a health based organization, therefore fully aware early on of the implications of the Wuhan outbreak. The DEIR itself acknowledged the potential implications of COVID 19, concluding that:

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> "The net effect of the pandemic on the Parnassus Heights campus site development and operations cannot be predicted at this point in time without speculation." DEIR at page 1-9.

The DEIR concedes COVID 19 has implications for the Project. For example, the objectives for the New Hospital, objectives used in part to dismiss some alternatives, include an increase in beds to provide for inpatient health care in times of severe strain such as the current pandemic. DEIR at page 6-4. The brief discussion at page 1-9 also acknowledges that UCSF will likely consider operational changes such as increases in telehealth services and telework, among others.

COVID 19 was known or should have been known at the time of the issuance of the NOP and certainly, as reflected in Section 1.7 of the DEIR, was known prior to circulation of the DEIR for public comment. COVID 19 warrants changes and updates to existing environmental setting information, critical to complete an accurate impact analysis, as well as to the Project Description (e.g., space needs changes given a likely transition as noted in the discussion to telework and telehealth). Significant questions are raised by COVID 19 that have implications to the Project and related impacts – including but not limited to an acknowledgement that UCSF is likely to increase telework, telehealth consultations and remote learning. These are but a few of the changes warranting UCSF to hit pause both to revise the DEIR and to re-engage the public and experts, right-size the Project and evaluate other alternatives that would reduce or eliminate impacts while adhering to the existing space ceiling.

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II. The Project Violates the California Environmental Quality Act

A. The Project Description is In Flux

A fundamental requirement of CEQA is that an EIR contain an accurate, complete and stable project description. Without a complete and stable project description, an agency and the public cannot be assured that all the project's environmental impacts have been revealed and mitigated. Further, CEQA and the CEQA Guidelines mandate that an EIR include a description of the "physical environmental conditions . . . from both a local and a regional perspective. . . Knowledge of the regional setting is critical to the assessment of environmental impacts." CEQA Guidelines Section 15125(a) and (c). This requirement derives from the principle that without an adequate description of the project's local and regional context, the EIR – and thus the decision-makers, agencies and public who rely on the EIR – cannot accurately assess the potentially significant impacts of the proposed Project.

As discussed above, the Project is likely changing in fundamental ways due to COVID 19 – including adjustments to the Project due to a likely increase in telework and telehealth, among other adjustments:

> "UCSF will likely consider operational changes such as increases in telework and telehealth services, especially primary and secondary health care services." DEIR at 1-9.

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In addition to telehealth and telework, distance learning also appears likely on the increase. The overall space needs and allocations for the Project should be revisited in light of COVID 19 and other rapidly changing conditions due to COVID. The emerging stakeholder process referenced in the June 2020 Staff Memo to the San Francisco Planning Commission provides another good reason to pause the proposed Project entitlement process and discuss an appropriately scaled Project for the Parnassus campus site. 56 cont.

B. The DEIR Includes Incomplete and Inadequate Baseline Information to Support the Analysis of Project Impacts

The DEIR fails to adequately describe baseline (environmental setting) conditions. Setting or environmental baseline information is as essential to adequately disclosing and analyzing project-related and cumulative impacts as a complete and consistent Project description. Without adequate and complete information about the environmental setting, it is not possible to determine whether the Project improves or makes worse existing environmental conditions or the extent of the Project-related and cumulative impacts. The Project NOP was issued January 14, 2020 after the COVID 19 pandemic was a known crisis. As such, the DEIR's baseline or existing environmental setting information must be updated to reflect conditions Pre-COVID 19 and Post emergence of COVID 19. Another option is to postpone the Project until more is known about the COVID crisis. Both pre- and post- emergence of COVID 19 information is critical if adequate analyses are to be completed for topics ranging from land use, housing and population to transportation. 57

Examples of baseline setting information that is missing from the DEIR includes but is not limited to the following.

1. Students, Faculty and Staff

The DEIR omits information essential to analysis of whether the Project will result in significant impacts to housing supply as well as related impacts of displacement due to increased demand for housing and gentrification. Such information includes at a minimum the general salary ranges of new students, faculty and staff. Such information was provided in the Mission Bay Hospital environmental documents and fiscal impact analysis, hereby incorporated by reference. . In addition, the DEIR should provide information about the current student, staff and faculty to inform analysis of new housing demand (e.g., where do current staff, faculty and students live? Etc.). 58

2. Demographics in the Surrounding Neighborhood and City

Basic demographic information must be part of the DEIR's revised baseline in order to support and inform analysis of Project impacts on housing. The DEIR includes no information about the surrounding area demographics or demographics in the City and study area, making adequate analysis of impacts impossible. 59

3. Affordable, Student, Workforce and Family Friendly Housing

The Project will significantly increase students, staff and faculty at the campus adding to the demand for scarce housing affordable to new students, staff and faculty in the areas surrounding the Project, the City and the region. In addition the Project will nearly double projected new job growth due to the multiplier effect. The DEIR must analyze the potential for the Project to raise housing prices, contribute to gentrification and displacement due to price increases and competition for scarce housing in the surrounding area, San Francisco and the region. Very little setting information is provided to support analysis in the short, 13 page section on Population and Housing and the even shorter, 8-page discussion of growth inducement.

To perform an adequate analysis of Project and cumulative impacts to population and housing and growth inducement, it is essential the DEIR include in the description of the Project baseline (setting) details concerning existing vacancy rates for affordable units, including deed restricted housing, family housing, and housing affordable to the workforce[2] in the surrounding neighborhoods[3], the City as well as the broader five-county study area. Little setting information is provided in support of the DEIR's across the board conclusions that impacts associated with project growth will be less than significant. The DEIR contains no information concerning affordable housing and workforce housing whatsoever.

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Without current and complete information about the existing housing stock in the surrounding neighborhoods, the City and the study area, the DEIR cannot adequately analyze the Project's impact on affordable, workforce and family friendly housing and households, and the DEIR's conclusions concerning the insignificance of Project-related and cumulative impacts cannot be supported by facts and evidence. The DEIR must be revised to include this and other baseline information, including changes in housing stock and availability pre- and post- emergence of COVID 19. While long term effects of COVID 19 maybe speculative, some effects are known and should be disclosed where possible.

In addition to the above information, the DEIR must discuss and include in its revised analysis, the locations of disadvantaged communities. Such information is essential to support analysis of the extent to which the Project could further impact these DACs and exacerbate existing housing inequity. Sources of this information are readily available. See e.g., Urban Displacement Project www.urbandisplacement.org/map/sf. Project such as this one have a high potential to contribute to the gentrification and displacement of disadvantaged communities

[2] Workforce housing is housing at the lower end of market rate serving households with up to 200% of median income and often referred to as the "missing middle" or gap in affordable housing in San Francisco. Voters recently approved funding to build more housing, including for the SF workforce.

[3] Increasingly with the COVID 19 threat, workers and students choosing to avoid transit are increasingly putting pressure on nearby housing. This warrants adjustment of the DEIR's analysis of housing impacts in the surrounding neighborhoods.

due to the influx of additional students, staff and faculty who most likely will be seeking housing within walking and biking distance to the campus in a post COVID world.

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4. Existing Jobs-Housing Balance and Fit within the Surrounding Neighborhood, City and Regional Study Area

The DEIR must analyze the potential for the Project to make worse the existing imbalance of jobs and housing. Little information is provided in the DEIR on jobs housing imbalance pre- or post-emergence of COVID 19. The DEIR fails to cite readily available information for San Francisco and Region concerning the growing imbalance. Specifically, San Francisco or more accurately in the SF-Oakland-Hayward census area, created only one new home per 6.8 new jobs between 2010 and 2015. Source: US Census Data. Looking just at San Francisco, it comes out to 8.2 jobs per new home during that same period, further increasing an enormous gap in the already out of balance housing to jobs ratio in the Bay Area. Not surprising rents increased by 43% over the same period due to housing scarcity and competition from new employees. Source: U.S. Census Data 2010 and 2015. This data is readily available and must be included in a revised DEIR to support a credible analysis of the Project's impacts on housing and growth.

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C. Finding the right jobs-housing balance has long been an important concern for urban planners and an important policy consideration for general and area plans. More recently, attention has turned to jobs-housing fit – the extent to which housing price and rent is well matched to local job salary and quality. The DEIR are silent on the matter of jobs housing fit and fails to adequately address the issue of jobs housing balance. The DEIR should be revised to describe the existing job-housing balance and fit for the surrounding neighborhoods, the City and region. Updated baseline (environmental setting) information must include a description of changes in demand for housing in San Francisco Pre- and Post-Emergence of COVID 19. This information is not only necessary to adequately analyze environmental topics such as displacement and Project demand for new housing, but it is also essential to determining the extent to which the Project will increase commuting, traffic, transit demand, and vehicle miles traveled. Without this information, the full impacts associated with air quality and greenhouse gas emissions, among other impacts cannot be adequately analyzed and conclusions concerning the significance of Project-relation and cumulative impacts cannot be supported by facts and evidence. The DEIR must be revised to include this and other baseline information to inform revised impact analyses and conclusions. The DEIR's Analysis of, and Mitigation for, the Impacts of the Project Are Inadequate

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The discussion of a project's environmental impacts is at the core of an EIR. See CEQA Guidelines Section 15126(a). As explained below, the DEIR's analysis of the Project's environmental impacts are deficient under CEQA because the DEIR fails to provide the necessary facts and analysis to support informed decisions about the Project, mitigation

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measures and alternatives. An EIR must contain facts and analysis, not just bare conclusions. A conclusion regarding the significance of an environmental impact that is not based on analysis of the relevant facts fails to fulfill CEQA's information mandate.

Additionally, an EIR must identify feasible mitigation measures to mitigate significant environmental impacts. CEQA Guidelines Section 15126.4. Under CEQA, "public agencies should not approve projects as proposed if there are feasible alternatives or feasible mitigation measures available which would substantially lessen the significant environmental effects of such projects. . . ." Pub. Res. Code Section 21002.

As explained below, the DEIR fails to provide detailed, accurate information about the full breadth of the Project's potentially significant impacts with respect to growth inducement, population and housing and land use and planning. The DEIR's cumulative analysis of these impacts is also deficient. Where the DEIR fails to adequately analyze the Project-related impacts, the cumulative analysis cannot be adequate. Further, the DEIR does not identify and analyze feasible mitigation measures that would reduce or avoid such impacts.

63 cont.

1. The DEIR's Analysis of the Project's Growth-Inducing and Population and Housing Impacts is Flawed

The DEIR's analysis of growth inducing and population and housing impacts is flawed and conclusions reached by the DEIR that all impacts are less than significant incorrect. These topics are closely related and the two sections contain multiple cross references. Therefore, these impact topics are discussed together in this section.

CEQA requires that an EIR include a detailed statement setting forth the growth-inducing impacts of a proposed project. Pub. Res. Code Section 21100(b)(5). A proposed project is either directly or indirectly growth inducing if it: (1) fosters economic or population growth or requires additional housing; (2) removes obstacles to growth; (3) taxes community services or facilities to such an extent that new services or facilities would be necessary; or (4) encourages or facilitates other activities that cause significant environmental effects. CEQA Guidelines Section 15126.2(d). While growth inducing impacts of a project need not be labeled as adverse, the secondary impacts of growth (e.g., gentrification and displacement, demand for additional housing and services, traffic, air pollution, etc.) may be significant and adverse. In such cases, the secondary impacts of growth inducement must be disclosed as significant secondary or indirect impacts of the project. The analysis required is similar in many respects to the analysis required to analyze impacts associated with population and housing.

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a. Growth Inducement Analysis is Woefully Lacking

The DEIR contains a short, 3 and 1/2-page discussion of Growth Inducing Effects. The discussion acknowledges the Project will increase the campus population by approximately 4,100 persons by 2030 and an additional 1,080 persons by 2050, including students and faculty and staff. The DEIR also calculates the multiplier of 0.73 for an additional 3,420 jobs that could

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be indirectly caused or induced by the Project. The Project includes construction of 142 net new housing units/beds within the Aldea housing complex and an additional 620 new residential units for a net total of 984 new units by 2050.

The DEIR concedes "[c]ampus population growth under the proposed CPHP would not be entirely accommodated by the existing and new housing on site, and therefore would result in indirect housing demand beyond the campus site." DEIR at 5-5. The discussion provides little real analysis of the Project's potential to induce growth in accordance with CEQA, nor does the discussion reach any conclusions as to the significance of growth inducing impacts instead relying on the assertion that the growth allowed by the Project is not substantial when "compared to the study area growth projections and to the extent that demand for new housing would exceed the capacity of the market area.[4]" DEIR at page 4.12-10. Yet, the discussion does not identify any potentially significant impacts associated with population growth as a result of the elimination of the existing space ceiling and implementation of the Plan.

The DEIR goes on to state:

> "Generally, the housing demand associated with employment growth under the proposed CPHP would be satisfied by the housing that could be added in San Francisco and in other parts of the region." DEIR at 4.12-8.

San Francisco and the region has been grossly underbuilding planned housing while generating significant new jobs; facts not disclosed by the DEIR. There is no information in the DEIR about the current housing crisis in San Francisco and region as summarized below. Nor does the DEIR contain any information about housing availability in the surrounding neighborhood and City, or information about housing affordability. Moreover, the DEIR fails to describe the breakdown of new students, faculty and staff in terms of numbers by typical jobs and salaries; information critical to estimating the percent of new staff, faculty and students who qualify as low income or very low income requiring lower cost housing options. Finally, the DEIR fails to acknowledge that UCSF is a major contributor to the affordable housing crisis, and will exacerbate that crisis by building out its expansion plan without building ad ditional units affordable to new students, faculty, staff and employees of supporting services. See Jobs Housing Nexus Analysis SF, Kaiser Marston Associates, 2018 submitted under separate cover

Instead of the required analysis, the DEIR points to the Population and Housing Section conclusion to support its cursory overview of growth inducement impacts:

> "Implementation of the proposed CPHP would induce population growth in the Bay Area, but the population growth would not be substantial in comparison to growth that is projected and planned for San Francisco and the four study area counties in Plan Bay Area 2040 and the local general plans for the study area communities. Further, the population

65 cont.

[4] Five county study area.

growth would not result in a demand for new housing that would exceed the capacity of the five-county market area." DEIR at 4.12-9. Emphasis added.

By comparing the Project's growth to the entire City and region, the DEIR seeks to diminish the significance of housing demand generated by the Project. There is no question the Project will generate substantial additional growth in a highly constrained neighborhood[5], by increasing the daily average population by approximately 45%, nearly 5,200 students, faculty and staff. DEIR at page 4.12-1. In addition, the Project generates an additional 3,420 jobs based on a multiplier of 0.73%; jobs that will put additional demand on a tight housing market. No information is provided about the nature of these jobs or the associated salary ranges of employees. The Project will also increase likely increase the demand for housing in the immediately surrounding neighborhoods and City as people avoid transit in a COVID worried world and seek to walk and or bike to work.

The Project most certainly will induce growth that will in turn significantly impact housing. Total new housing demand could be as high as 6,000+ units assuming that the majority of students, faculty, staff and indirect job employees are people who need housing. Lower demand for new housing, assuming all new students need housing and only 50% of faculty and staff need housing, at 4,000+ units, would still constitute a significant impact on a highly constrained housing market and could result in displacing local residents due to competition and gentrification. If demand is lower, due to a higher percent of new students, staff, faculty and indirect job employees are already housed (50%) the impact at 4,000+ units will still be significant due to the housing crisis because under either scenario, UCSF would be generating between 4 and 8 jobs for each new unit constructed. Added to the existing jobs-housing deficit in San Francisco and the region and the even greater deficit of housing affordable to low and very low income households, the growth induced by the Project would result in a significant impact on housing. Salaries disclosed for the Mission Bay Project for UCSF's workforce, suggest the majority of new students, staff and faculty will need housing affordable to low incomes. See www.payscale.com/research/USEmployer=UCSFMedicalCenter

65 cont.

Housing Demand Range			
Direct/Multiplier Growth at 2040 DEIR page 4.12-7	Students 504	Faculty and Staff 4,680	Multiplier/Indirect Employees: 3,420
Housing Demand Estimates	High Demand (worst case scenario 100 require housing): 504 units	High Demand: (worst case scenario 80% not housed, net new): 3,744 units	High Demand: 50% not housed, new demand):

[5] Constrained in terms of circulation and housing.

	Low Demand (50% not housed, new demand) 252 units	Low Demand (50% not housed, new demand) 2,340 units	1,760 units

These housing-related impacts are more than glossed over by a discussion that excludes any information about the dire housing crisis.

Substantial new non-residential and residential growth in San Francisco includes total population growth based on household size assumptions[6], in addition to new students, staff and faculty estimated in the DEIR to be as high as 12,220 people by 2050. DEIR at page 4.12-8. This estimate does not include indirect growth associated with the multiplier, but does assume all new growth is in San Francisco. This significant new growth will require additional public services, likely including expansion and therefore construction of facilities in the neighborhood or adjacent neighborhoods of a myriad of services. Yet the DEIR provide cursory information about these services and facilities and fails to analyze the associated impacts, including fiscal impacts. CEQA requires that if new construction of housing will occur to accommodate the Project's employees or services beyond that included in the Project, then the EIR must analyze the environmental impacts of that construction. The appropriate components for an adequate analysis include: (1) estimating the amount, location and time frame for growth that may result from the implementation of the Project (e.g., additional housing); (2) considering whether the new population would place additional demands on public services such as fire, police, recreation, emergency, health, childcare or schools; (3) applying impact assessment methodology to determine the significance of secondary or indirect impacts as a result of growth inducement; and (4) identifying mitigation measures or alternatives to address significant secondary or indirect impacts. CEQA Guidelines Appx. G Section XIII(a). The DEIR must be revised to provide this analysis and based on this analysis, to revise other environmental analyses including but not limited to population and housing, transportation, air quality, among other topics where impacts are derived in part from direct and indirect growth assumptions. 65 cont.

The DEIR dismissal of likely growth inducing impacts because the impacts are "impossible to determine" violates CEQA. Virtually the sum total of the discussion, below, lacks analysis and supporting facts and evidence while at the same time identifying the potential areas of significant impacts associated with significant growth:

> "While it is acknowledged above that the precise nature, location, and magnitude of effects of indirect and induced growth cannot be determined, the proposed CPHP

[6] 2.36 persons per HH; assumes only one student per HH. DEIR at page 4.12-8.

> would likely increase overall demand in the region for housing, commercial and industrial space, and associated infrastructure. Potential effects could include increased traffic congestion; increased air pollutant emissions; loss of agricultural land and open space; loss of habitat and associated flora and fauna; increased demand on public utilities and services, such as fire and police protection, water, recycled water, wastewater, solid waste, energy, and natural gas; and increased demand for housing. An increase in housing demand in the Bay Area region would also require governmental services including, but not limited to schools, libraries, and parks to serve new commercial and residential development." DEIR at 5-7.

65 cont.

The discussion also acknowledges that this growth could contribute to a loss of open space by converting those lands to housing, commercial space and infrastructure, but attempts to discount the many impacts associated with conversion of natural and working lands by pointing out without evidence that "most jurisdictions have adopted smart-growth policies that discourage or prohibit this type of development." DEIR at 5-7.

A revised growth inducing analysis must be included in a recirculated DEIR. The impacts of growth must also be considered in new analysis concerning the social equity impacts of the Project. See Attachment 4, Draft Planning Commission Resolution.

b. The DEIR's Analysis of and Mitigation for the Project's Population and Housing Impacts is Inadequate

The DEIR's approach to analysis of population and housing does not adequately analyze Project-related impacts associated with changes that would occur with Project implementation to the population, including employment and residential growth. Instead of actually analyzing the Project's impacts related to population and housing, the DEIR asserts that all impacts both direct and indirect will be less than significant. The DEIR lacks facts, analysis and evidence to support this conclusion. The result is a lack of information about the actual severity and extent of impacts associated with significant growth in population including students, faculty, staff and patients and visitors. For a Project that will guide development of the campus for 30+years and likely be the basis of streamlined permitting for project facilities and infrastructure, it is especially important that the DEIR comprehensively identify and analyze its impacts on growth, population, housing and employment.

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In determining impact significance associated with growth in population, employment and housing, CEQA requires analysis of the following topics (substantially similar in DEIR at page 4.12-6):

- Would the project induce substantial population growth in the area, either directly (for example by proposing new homes and businesses) or indirectly (for example, through extension of roads and other infrastructure)?

- Would the project displace substantial number of existing housing units or create demand for additional housing, necessitating the construction of replacement housing?
- Would the project displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

In order to analyze the above significance thresholds, the DEIR must also address the following questions:

- Would the project result in the net loss of any existing housing units affordable to very low income or low income households through any means including gentrification?
- What is the net change in affordable versus market rate units in the surrounding neighborhoods as a result of the Project?
- Would the Project impact a disadvantaged community (DAC)?
- Would the project result in a greater imbalance between jobs and housing, including jobs housing fit?[7]

Finally, the DEIR fails to disclose the Project's inconsistency with the UCSF 2014 LRDP Community Planning Principle HI which calls for projects to make a positive contribution to San Francisco's affordable housing stock...in order to relieve housing demand in the local community. DEIR at page 4.12-4.

66 cont.

The DEIR's analysis of these potential impacts associated with population, employment and housing is inadequate starting with the lack of any credible environmental setting or context for the discussion including the following basic facts:

- San Francisco and the region added more jobs than housing over the last decade. Census data shows that San Francisco added 8.2 jobs per home since 2010. Overall, the Bay Area has added 2 jobs for every home built since 1990. See also Plan Bay Area Final Plan 2040, Attachment 5.
- Between 2011 and 2017, the region added 658,000 jobs and 140,000 housing units, or on average 4.7 jobs for every housing unit. SPUR Regional Strategy, Attachment 6.
- The shortfall of housing units is estimated by SPUR to be nearly 700,000 units including units to meet the needs of both middle income and lower income households. Id.

[7] Jobs-Housing fit means the extent to which housing prices or rents are matched to the local job salary ranges. Jobs-Housing balance provides a general sense of how in or out of balance housing to fit the local workforce may be. Jobs-Housing fit provides an essential and more granular sense of whether – even if in balance – local employees are able to reside locally or must commute long distances for housing affordable to them and their families. Without jobs-housing fit information, readily available using Census and other data, it is not possible for the DEIR to adequately analyze many Project-related and cumulative impacts including demand for new housing and vehicle miles traveled, among others.

- In order to meet the unmet past need plus future needs for housing, the Bay Area would need to build 45,000 units per year to produce an additional 2.2 millions units by 2070. Id.
- The production of affordable housing has lagged behind production of housing affordable to higher incomes, with significant shortfalls of housing production for moderate or middle income wage earners and lower income wage earners. From 1999 to 2014, the Bay area issued permits for only about 35% of the units to meet the needs of vulnerable populations such as low-income families. Id.
- Much of the older housing stock located in higher density areas such as San Francisco have experienced gentrification pressures due to competition from new and higher income wage earners. Id.

A revised DEIR must provide baseline information about the housing crisis and re-analyze housing-related impacts of the Project in light of that information. Based on accurate information about the pre-Covid SF and Bay Area housing crisis (summarize above), it can reasonably be concluded that the additional of 5,200 students, faculty and staff by 2050 and only 984 units produced, the housing need generated constitutes a significant impact. Demand for housing is further exacerbated by the job multiplier of 0.73 creating an additional 3,420 jobs induced by the Project. Total new housing demand could be as high as 6,000+ units assuming that the majority of students, faculty, staff and indirect job employees are people who need housing. Lower demand for new housing, based on more new staff and faculty already housed, at an estimated 4,000+ units, would still constitute a significant impact. If demand is lower, due to a higher percent of new students, staff, faculty and indirect job employees are already housed (50%) the impact at 4,000+ units will still be significant due to the housing crisis. Under either scenario, UCSF would be generating between 4 and 8 jobs for each new unit constructed. Added to the existing jobs-housing deficit in San Francisco and the region and the even greater deficit of housing affordable to low and very low income households, the growth induced by the Project would result in a significant impact on housing. 66 cont.

The Project is also inconsistent with the Community Planning Principle HI directed at relieving housing demand on the local community. The DEIR's conclusion that "population growth would not result in a demand for new housing that would exceed the capacity of the five-county market area," and that "CPHP's impact related to population and housing would be less than significant" is clearly incorrect.

c. A Revised DEIR Must Include Feasible Mitigation Measures and Alternatives to Address Significant Impacts to Housing

The DEIR must identify feasible mitigation measures and alternatives capable of reducing or eliminating significant impacts. The DEIR fails to do so. 67

In reaction to the housing crisis, SF voters passed Measure E in March 2020, limiting construction of new office building unless affordable housing goals are met. Measure E is instructive as to the kinds of mitigation measures UCSF should consider in addressing the increased imbalance of housing and jobs the Project would foster.

Feasible mitigation measures that should be included in a revised DEIR include the following:

- Increase Project housing to provide sufficient and affordable housing for new students, faculty and staff as well as a portion of induced demand (multiplier) by increasing housing proposed by the Project and decreasing new jobs.
- Provide sufficient housing in advance of the development and occupation of non-residential buildings (in line with Measure E).
- Adopt a project that adheres to the existing space ceiling thereby reducing increased staff and faculty and associated housing demand.

These and other feasible mitigation measures must be identified in a revised DEIR to address the significant population and housing impacts of the Project and cumulative development on the Project area, the City and region. A Financial Analysis should accompany the revised Plan and DEIR setting forth costs associated with housing, services and other community benefits of the Project and laying out a revised approach to funding implementation of these Project elements.

- Would the project displace substantial number of existing housing units or create demand for additional housing, necessitating the construction of replacement housing?

67 cont.

2. The DEIR's Analysis of Land Use and Planning Is Incomplete and Inadequate, Thereby Failing to Disclose and Mitigate Significant Impacts

The DEIR incorrectly identifies as Less Than Significant the Project's Land Use and Planning impacts. At the heart of the analysis of land use and planning impacts is the question of the Project's consistency with applicable policies and other provisions including UC's as well as the City's. Contrary to the DEIR's conclusions, the Project is incompatible with the surrounding area and conflicts with numerous policies and provisions of San Francisco's General Plan and Planning Code, as well as UC policies. Due to UC's constitutional autonomy, development and uses on property under the control of the University that are in furtherance of the University's educational purposes are not subject to local land use regulations. However, UCSF has indicated its intent to adhere to local policies and regulations to the extent practicable and to review policies germane to the analysis of land use impacts. DEIR at page 4.10-6. In the pertinent topical sections (e.g., Land Use and Planning, Noise, Aesthetics) the DEIR does describe pertinent policies and regulations, finding in each case that the Project is compatible with surrounding land uses and as such would not create any significant impacts. As described below, the analysis of land use and policy consistency is flawed and the conclusions

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unsupported by evidence. Contrary to conclusions reached in the DEIR, there is evidence of policy and regulation inconsistency resulting in significant environmental impacts, only two of which – wind and cultural – are disclosed and acknowledged.

68 cont.

Planning and Land Use Context: The *San Francisco General Plan* provides policies and objectives to guide land use decisions and along with the San Francisco Planning Code prescribes the permitted uses and development standards to carry out the City's policies for the 107-acre Parnassus Campus site. In a 1987 Memorandum of Understanding (MOU), UCSF agree to advise and consult with the City of San Francisco on any proposed construction projects. The MOU states that the City Planning Commission will advise UCSF about the "conformance of such development with the Master Plan of San Francisco and Planning Code Section 304.5 (Institutional Master Plans) with recommendations, of any, for amendment to the proposal… Should the City Planning commission and UCSF disagree on any matter which is the subject of this MOU, either party may request the participation of the Mayor and the Chancellor in attempting to resolve the dispute." (MOU, para. IV). The DEIR must, include a complete and forthright analysis of the Project's consistency with the General Plan and other applicable planning documents, ordinances and regulations so that UCSF can honor its intent to adhere to the extent practicable, the City's policies and "zoning codes related to building use, height, and bulk limitations; floor areas; and parking requirements or restrictions for the purpose of ensuring compatibility with the surrounding uses." DEIR at page 4.10-6. Inconsistencies between the Project and the General Plan or other applicable planning documents that were enacted to protect the environment may constitute significant impacts in themselves and can also be evidence of other significant impacts that must be analyzed in the DEIR. Where elements of the Project are not part of its educational mission, and are inconsistent with the General Plan it may not be lawfully adopted or approved. Additional information is needed about the Project elements in order to describe and document how the entirety of the Project is in support of UCSF's educational mission. It is not possible to determine that without more details about how the new space will be used and occupied and for what specific purposes.

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While not considered by UCSF objectives or regulations, reference is made in the UCSF 2014 LRDP, to the Community Planning Principles which were produced in collaboration with the UCSF Community Advisory Group. These Principles include the following:

- Land Use LU1. Plan for growth and renovations that are substantially consistent with use limitations and height and bulk limitations in the City planning and zoning codes that exist at the time UCSF initiates the site selection process for such growth and renovation projects. The University should consider City planning proposals that are underway. UCSF will endeavor to be consistent with applicable land use plans and mitigation approaches where consistent with UC policy, while respecting specific neighborhood plans and concerns.

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- LU3. Ensure that future UCSF development is compatible with physical surroundings in use, scale, and density, and that do not negatively affect surrounding land uses.
- LU10. Work toward compliance with the Parnassus Heights space ceiling and adhere to boundaries for the Parnassus Heights Campus site.

DEIR at page 4.10-3 to 4.10-4.

The Parnassus Heights campus site, the oldest and largest of the UCSF campuses, is located in among some of the oldest neighborhoods in San Francisco, characterized by unique physical characteristics and mix of land uses including residential areas ranging from single family to multi-family housing and charming neighborhood serving commercial districts such as located along Irving and Judah Streets and 9th Avenue. In addition to Mount Sutro Open Space Reserve, several park and open space areas are located near the campus. This area is characterized by local serving streets fraught with traffic, parking congestion and lack of transit.

Compliance with the City of San Francisco's adopted policies and regulations are a key indicator of whether the Project is or is not compatible with the surrounding neighborhood. UCSF clearly understood the breaking point for compatibility in its 1976 Regents' Resolution. Recognizing the unique and constrained location the Parnassus Heights campus occupies, the Regents adopted a sensible "space ceiling" for the campus in its 1976 Regents Resolution, stating in pertinent part: "The total structures within the campus boundaries shall not exceed 3.55 million gross square feet (not including space committed to residential use on Third, Fourth, Fifth and Parnassus Avenues and Kirkham and Irving Streets) and this limit shall be permanent." See Attachment 2.

In addition, the Resolution recognizes the transportation problems in the area and commits funds to develop a plan to alleviate transportation problems including traffic, parking congestion and lack of transit.

In a letter to Chancellor Hawgood, dated January 16, 2020, Mayor London Breed, President of the Board of Supervisors Norman Yee and Supervisor Dean Preston note the need for a revised MOU to adopt and formalize arrangements for coordination and consideration of both our interests and inputs in the context of land use approvals, transportation needs and ongoing service provisions, noting the common challenges faced include housing supply, affordability and climate and seismic related risks. See Attachment 3.

In this case, after discussing only some of the applicable plans, the DEIR incorrectly concludes across the board that the Project would be compatible with adjacent lands uses and impacts would be insignificant. Some examples of the Project's glaring inconsistencies with the General Plan and Code include, but are not limited to, the following:

70 cont.

San Francisco General Plan and Zoning Code Excerpt	Inconsistency
Land Use and Urban Design Elements LU-2: Plan for growth and renovations that are substantially consistent with use limitations and bulk limitations in City planning and zoning codes that exist at the time UCSF initiates the site selection process for such growth and renovation projects…UCSF will endeavor to be consistent with applicable land use plans and mitigation approaches where consistent with UC policy, while respecting specific neighborhood plans and concerns. LU3. Ensure that future UCSF development is compatible with physical surroundings in use, scale, and density and do not negatively affect surrounding land uses. LU10. Work toward compliance with the Parnassus Heights space ceiling and adhere to boundaries for the Parnassus Heights campus site. Policy 3.5: Relate the height of buildings to important attributes of the city pattern and to the height and character of existing development. Policy 3.6: Relate the bulk of buildings to the prevailing scale of development to avoid an overwhelming or dominating appearance in new construction. San Francisco Planning Code – Use Districts City's P (Public) Zoning District Housing along Third and Fifth Avenues – see also Residential House District, Two-Family (RH-2) Code sections Height and Bulk Districts: 25-X, 40-X, 65-D, 80-D, 130-D and 220-F. Floor areas rations are determined by allowable height and coverage.	The DEIR correctly concludes that the New Hospital, as well as Millberry Union, certain West Side development and the Aldea Housing densification project would not be consistent with City Planning Code height and/or bulk regulations for their respective building sites. DEIR at 4.10-16. The DEIR continues on to incorrectly conclude despite evidence to the contrary, that these conflicts would not result in significant incompatibility with adjacent land uses or impacts on surrounding uses. Taking just the New Hospital as an example, at about 955,000 gross square feet and up to 294 feet in height, the New Hospital clearly demonstrates the Project's incompatibility with the surrounding area resulting in significant adverse environmental impacts including but not limited to, wind, visual and environmental impacts associated with an inadequate supply of housing affordable to new students, faculty and staff. The New Hospital is patently inconsistent with SF Land Use and Design policies and height and bulk requirements in multiple ways. First, the New Hospital is within three height and bulk districts and exceeds height limits for portions of the site within two of these, the 65-D and 22-F Height and Bulk districts, by over 70 feet and X stories. Second, the New Hospital would require use of a portion of the Reserve and would be located even closer to the off-site residences on Edgewood. The DEIR concedes: Impact AES-2 finds that the New Hospital would be the most noticeable visual change under the CPHP program, and would contrast sharply both in height and scale with the nearby residential development…". DEIR at 4.10-17. In justifying the conclusion that the New Hospital is compatible with adjacent land uses, the DEIR points to the proposed amendments to the 2014 LRDP which increase the space ceiling. In addition, the DEIR (Impact AES-3) finds that with implementation of appropriate design standards and exterior materials light and glare and other impacts would be reduced to less than significant.

70 cont.

	Even so, the DEIR concedes that the New Hospital will still result in significant unavoidable wind hazards. Analysis by Jared Ikeda provides clear evidence the New Hospital with also result in significant and unavoidable visual impacts. See Attachment 7. There are clear inconsistencies between the New Hospital and the City's General Plan policies and Code resulting in documented significant and unavoidable impacts associated with wind hazard, visual and housing, among other impacts. <u>These inconsistencies and the associated physical environmental impacts are not resolved by the amendment to the LRDP to raise the space ceiling.</u> Combined with other Project elements – Millberry Union, West Side – and the Project scale and bulk overall, the Project is clearly incompatible with the surrounding area resulting in significant and unavoidable impacts including those omitted from the DEIR but disclosed (wind) and some revealed by expert analysis (e.g., visual, cultural, housing). A revised and recirculated DEIR must re-analyze Project consistency with these and other applicable provisions of the City's Plans and Codes and Impact LU-2 must be found to be a significant and unavoidable impact. In addition, the Project is clearly inconsistent with CPHP Policy 3.6, which states that the height of buildings should be related to the prevailing scale and character of existing development. The New Hospital at nearly 100 feet taller than the tallest existing building on the campus, Moffit Hospital, is clearly inconsistent with this Policy. A revised DEIR must include in a revised Land Use and Planning section a systematic and thorough analysis of inconsistencies with all applicable (City, UC, other) policies and regulations.	70 cont.
Urban Design Element Policy 1.1: Recognize and protect major views in the city, with particular attention to those of open space and water.	The DEIR incorrectly concludes the project will not conflict with these policies and specifically that "[d]evelopment under the CPHP would not have a substantial adverse effect on a scenic vista" (AES-1) or "conflict with the applicable zoning and other	71

Policy 3.4: Promote building forms that will respect and improve the integrity of open spaces and other public areas.	regulations governing scenic quality" (AES-2) and therefore no mitigation is required. In his analysis of visual impacts, Jared Ikeda concludes that the New 16-story Hospital would result in significant visual impacts including specifically that it would block views to Mt Sutro and the Reserve and would block views of the ocean and Golden Gate Park from trails and other public vantage points resulting in policy inconsistencies with direct significant environmental impacts. See Attachment 7. A revised DEIR must change the disposition of these impacts (AES-1 and 2) to significant and unavoidable and identify feasible mitigation measures including alternatives to the Project.	71 cont.
Shadow Proposition M, adopted by the voters in 1986, added section 101.1 to the SF Planning Code and established 8 priority policies. Priority Policy No. 8 calls for the protection of parks and open space and their access to sunlight and vistas.	The DEIR incorrectly states that the implementation of the Project would not create new shadow that substantially and adversely affects the use and enjoyment of publicly accessible open spaces. In his analysis of aesthetic impacts, Jared Ikeda reviewed the DEIR's analysis with respect to shadows and reached a different conclusion documented in his letter: "It appears though that certain areas along Parnassus Avenue and Irving Street will be subject to frequent shadows throughout the year." See Attachment 7. These more frequent shadows will clearly affect the use and enjoyment of these public spaces and as such should be called out as a Significant and Unavoidable impacts of the Project as proposed. Feasible mitigation measures must be identified.	72
Regents' Resolution: Space Ceiling of 3.55 Million Gross Square Feet	The DEIR conveniently concludes that the impacts associated with the Project's significant increase in gross square feet (an increase of approximately 1.5 million GSF about the existing space ceiling) and population increase from 18,500 to nearly 25,000, would be less than significant because the LRDP would be amended to increase both space and population. An amendment to the space and population ceiling does not eliminate the physical environmental impacts described in the table above associated with the increased scale of the Project. Such impacts include wind hazard (found SU by the DEIR), cultural (found SU by the DEIR) and additionally,	73

	aesthetic (visual and shadows) and housing, among others. A revised DEIR must identify this as an inconsistency, re-analyze the associated environmental impacts and identify feasible mitigation including alternatives to Project components such as the New Hospital.

73 cont.

A revised DEIR must include expanded and forthright analysis of the Project's potential inconsistencies with applicable plans and policies including the City of San Francisco's, and disclose the significant and significant and unavoidable, environmental impacts associated with those inconsistencies.

In addition, a revised DEIR must include feasible mitigation measures and alternatives to reduce or eliminate the significant impacts associated with those inconsistencies. Mitigation measures including, but not limited to the following should be considered:

- Retain the space ceiling and adopt an Alternative consistent with the space ceiling and other UCSF commitments.
- Seismically upgrade the existing hospital at Parnassus in combination with a New Hospital off-site (Mission Bay, Hunters Point, see other options in Alternatives discussion below).

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3. The DEIR Alternatives Analysis is Legally Deficient

Alternatives are optional ways that the Project could achieve most of the objectives while also reducing or eliminating the environmental impacts of the Project. (California Public Resources Code Section 21002). Typically, alternatives to the Project involve changes to the location, scope, design, and intensity but can also include method of construction and/or operation. Where the Project includes a mix of land use types as in the case of this Project, alternatives may also include alterations in the mix of land uses proposed in order to reduce or eliminate impacts (e.g., increase Project housing to meet demand for growth within the space ceiling).

The fundamental mandate is that "public agencies should not approve projects if there are feasible alternatives or feasible mitigation measures available which would substantially lessen the significant environmental effects of the project" (PRC Section 21002, 21081). Government agencies are required to consider alternatives to proposed actions affecting the environment. (PRC Section 21001 (g)).

The DEIR's alternatives analysis is legally deficient because it fails to describe a reasonable range of alternatives, or to the location of the Project, which would feasibly attain most of the basic objectives of the Project but would avoid or substantially lessen any of the significant effects of the Project, and evaluate the merits of the alternatives. "An EIR's discussion of alternatives must contain analysis sufficient to allow informed decision-making." (*Laurel*

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Heights I, 47 Cal.3d at 404). An EIR must also include "detail sufficient to enable those who did not participate in its preparation to understand and to consider meaningfully the issues raised by the proposed project." (*Id. At 405*.)

In developing a list of alternatives for analysis, both project objectives and known or likely significant impacts of the Project must be factored in. Alternatives need not meet all of the objectives and their fundamental purpose is to reduce or eliminate Project impacts. The Project setting can also influence the range and choice of alternatives. Offsite alternatives should be considered. Offsite alternatives must be feasible (e.g., site control by Project proponent or possible for the proponent to acquire the property).

Alternatives may not be rejected merely because they are beyond an agency's authority, would require new legislation or would be too expensive. An alternative may be eliminated from further review where it fails to meet most of the basic project objectives; is infeasible; does not avoid significant environmental impacts; and implementation cannot be reasonably ascertained or is remote and speculative. (CEQA Guidelines Section 15126.6 (f)).

75 cont.

The DEIR's Alternatives Analysis is Legally Deficient Because it Improperly Rejects Feasible Off-Site Alternatives and Omits Others Feasible Off-Site Alternatives

Feasible alternatives to the Project that would reduce or eliminate significant Project impacts including those acknowledged by the DEIR briefly considered but dismissed include:

- No New Hospital at Parnassus Heights Campus Site/Implement Phase 2 of Medical Center at Mission Bay Campus Site
- New Hospital at Mount Zion Campus Site

Omitted from the list of feasible offsite options are:

- Seton Hall Hospital Facility, which stands empty
- New Hospital at Hunters Point, which would provide jobs in and health services to an underserved and disadvantaged community

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The reasons provided in the short approximately one-page discussion dismissing the alternative of a new hospital at Mission Bay comes down to the alternatives' reported failure to meet very focused Project objectives and a purported conflict with the 2014 LRDP and CPHP. Specifically the DEIR states that the alternative would not meet some of the Project objectives (e.g., expansion of some services and other benefits from an interdisciplinary program) and would conflict with several 2014 LRDP and CPHPs objectives for Parnassus Heights campus including but not limited to adequate space to foster collaboration and to facility inter-dependence and connectivity for operational efficiency, adequate clinical and administrative support and aligned with other programs, increase in beds, and modern industry standards including seismic safety. Page 6-55 to 6-55. The discussion concedes that the alternative would reduce the significant

wind impacts, cultural and construction impacts, but that in so doing, it would likely also result in increased cross town traffic between the Parnassus and Mission Bay campus sites. Not analyzed was a combination of a smaller, new hospital at Parnassus in combination with Mission Bay; another feasible option that has the potential to address total need and allow phasing to accommodate patients and services.

Dismissal of these alternatives (New Hospital at Mission Bay and Combination of New Hospital at Mission Bay and Reduced Hospital at Parnassus) is not justified. First, the alternative would meet most of the Project objectives. If a New Hospital at Mission Bay is combined with a rebuilt smaller hospital at Parnassus, the alternative could meet the need for additional beds and services as well. The argument that this alternative would increase cross town traffic is not supported by any evidence or analysis. Finally, the conflicts with the 2014 LRDP are not persuasive since that document is being amended to break the space ceiling and this alternative would not require that significant amendment to the LRDP. In fact, the Mission Bay Hospital was justified in part by the development cap at the Parnassus Campus. These alternatives must be fully analyzed in a revised and recirculated DEIR, including additional facts and analysis to support the arguments concerning the alternatives conflicts.

The DEIR similarly dismisses the alternative of a new hospital at the Mount Zion Campus Site, stating that this alternative would result in UCSF hospitals operating at three different campus sites which would be "less than ideal and inefficient," would not help achieve the benefits realized through interdisciplinary collaboration and convergence between clinical care, research and education, land acquisition would be difficult and citing undisclosed conflicts with LRDP and CPHP objectives. The discussion concedes that the alternative would reduce the significant wind impacts, cultural and construction impacts, but that in so doing, it would likely also result in localized impacts at the Mt. Zion site and increased cross town traffic between the Parnassus and Mission Bay campus sites. This alternative also merits full analysis in a revised and recirculated DEIR because it would reduce or eliminate Project impacts and could be carried out in combination of seismic retrofits to the existing hospital at Parnassus to meet objectives and remain consistent with the space ceiling.

76 cont.

Alternatives may not be rejected merely because they are beyond an agency's authority, would require new legislation or would be too expensive. An alternative may be eliminated from further review where it fails to meet most of the basic project objectives; is infeasible; does not avoid significant environmental impacts; and implementation cannot be reasonably ascertained or is remote and speculative. (CEQA Guidelines Section 15126.6 (f)). Rejection of the Mission Bay and Mt. Zion sites for a new hospital, either in lieu of or in combination with a smaller hospital at Parnassus, is not supported by the evidence and analysis provided and both require full analysis in a revised and recirculated DEIR.

In addition, the revised and recirculated DEIR should also fully analyze a new hospital at Hunters Point and reuse of Seton Hall. A new hospital at Hunters point would eliminate the

significant impacts associated with the Project and provide jobs and health care to a disadvantaged and underserved community.

Since the Mission Bay alternative reduces the Project's significant impacts, while achieving almost all Project objectives, the DEIR is arbitrary and capricious for dismissing this alternative in particular from full review and in rejecting this alternative. In addition, the Mission Bay Campus was justified by the cap at Parnassus, making this alternative essential for full review. In light of the development cap at Parnassus, each of these alternatives warrants review in a revised and recirculated DEIR with priority on Mission Bay and Hunters Point.

76 cont.

III. The DEIR Must be Revised and Recirculated

Decision makers and the public cannot possibly assess the Project's impacts through the present DEIR which is riddled with omissions, errors and inconsistencies. Among other fundamental deficiencies, the DEIR repeatedly understates the Project's significant environmental impacts and therefore fails to formulate feasible mitigation to reduce these impacts. To resolve these issues, a revised DEIR that would necessarily include substantial new information must be prepared and recirculated.

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Sincerely,

Terry Watt

Terry Watt, ACIP

ATTACHMENTS

Attachment 1: Terry Watt Qualifications

Attachment 2: 1976 Regents' Resolution

Attachment 3: Letter from Mayor and Supervisors to Chancellor Sam Hawgood, 1/16/20

Attachment 4: SF Planning Commission Resolution

Attachment 5: Excerpt Plan Bay Area 2020

Attachment 6: Excerpt SPUR Regional Strategy

Attachment 7: Aesthetic Impact Analysis, Jared Ikeda

Attachment 1

Terry Watt, AICP

Terry Watt Planning Consultants

1937 Filbert Street - San Francisco, CA 94123

terryjwatt@gmail.com **Cell: 415-377-6280**

Terry Watt, AICP owns Terry Watt Planning Consultants Ms Watt's firm specializes in planning and implementation projects with a focus on regionally-significant land use and conservation work that advances sustainable development patterns and practices. Prior to forming her own consulting group, she was the staff planning expert with the environmental and land use law firm Shute, Mihaly & Weinberger. She is an expert in general and specific planning and zoning, open space and agricultural land conservation strategies and approaches and environmental compliance, including CEQA and NEPA. Her skills also include facilitation and negotiation, public outreach and project management. Terry is a frequent presenter at regional, national and statewide workshops and symposiums. She holds a master s degree in City and Regional Planning from the University of Southern California and a multi-disciplinary bachelor s degree in Urban Studies from Stanford University.

Terry works with a wide variety of clients throughout California including non-profit organizations, government agencies and foundations. She volunteers up to half her professional time on select projects. Recent projects and roles include:

- Project Manager and Governor s Office Liaison for San Joaquin Valley: Least Conflict Lands for Solar PV project. Project funding came from the Hewlett and Energy Foundation s matched by environmental organizations, the California Energy Commission and other private parties. The objective of the project was to identify areas in the Valley that had very low resource values for renewable energy to serve as an incentive for development of least conflict lands rather than valuable resource lands. Watt was responsible for overall project management and day to day coordination, multi-stakeholder (150 stakeholders) and agency (57 federal, local and agency advisors) outreach and participation, facilitation of meetings Governor s Office convening s all project logistics and project report. Link to Collaboration Platform – Data Basin San Joaquin Valley: http://sjvp.databasin.org/
- Governor s Office Liaison and Outreach Coordinator for the State s portion of the Desert Renewable Energy Conservation Plan (DRECP). As outreach coordinator, worked closely with local governments on DRECP related consistency issues with local general plans.
- Planning Consultant to California Attorney General s Office - Environment Section focusing on climate change, CEQA and general plans. (2007- 2010). While working with the Environment Section, assisted with settlements (Stockton General Plan, Pleasanton Housing Element and CEQA litigation); identified locally based best practices for local government planning to address climate change issues; and managed government outreach and consultation on general plans and climate action plans/energy elements/sustainability planning efforts. Post 2010 continue to provide periodic consulting services to the Environment Section related to select cases.
- Strategic Advisor and Planning Consultant to the Santa Clara Valley Open Space Authority, Greenbelt

Alliance and Committee for Green Foothills for the Coyote Valley Project focused on developing a conservation and development plan for the Valley Watt was responsible for preparing the group s early CEQA comment letter on the negative declaration for a proposed Warehouse Project and assisting with scoping comments for the EIR.

- Measure M-2 Sales Tax and Environmental Mitigation Measure. (2009-). Terry was the Co-project manager/facilitator of a 30+-member environmental coalition that through a unique partnership with the Orange County Transportation Authority (OCTA) and state and federal wildlife agencies generated nearly $500 million in funding for programmatic environmental mitigation (conservation land acquisition and stewardship) in Measure M2, Orange County Transportation Sales Tax.
- State Office of Planning and Research Special Projects (2011 – 2017). Advisor to OPR on General Plan Guidelines, Infill and Renewable Energy Templates as part of the required update of the General Plan Guidelines. Expert panelist for workshops on SB 743.
- Marin Countywide General Plan and Environmental Impact Report (2004 to 2007). Project Manager for the award-winning Marin Countywide Plan Update and its Environmental Impact Report. The General Plan was among the first to incorporate leading edge climate change, greenhouse gas emissions reduction and sustainability policies as well as monitoring, tracking and implementation measures to measure success.
- Staff to the Martis Fund, a joint project of five environmental groups and a Business Group (Highlands Group and DMB Inc.). (2008 – ongoing). The Fund was created as a result of litigation settlement. The Fund has distributed over $15 million dollars since its inception to a range of conservation (acquisition of over 5,000 acres of open space), stewardship and restoration projects and workforce housing projects (emergency rental housing support, down payment assistance and low income apartments). Funding comes from a permanent transfer fee on all real estate sales at Martis Camp. http://www.martisfund.org/PDFs/Martis-Fund-Brochure.pdf
- Tejon Ranch Land Use and Conservation Agreement. (2006 – ongoing). Project coordinator for a dialogue process between environmental groups (Natural Resources Defense Council, Sierra Club, Endangered Habitats League, Planning and Conservation League, Audubon California) and The Tejon Ranch Company that resulted in a major Land Use and Conservation Agreement for the permanent protection of 240,000+ acres (90%) of the 270,000 acre Tejon Ranch. Secretary John Laird refers to the Agreement as a miracle agreement. In return for permanent conservation of + acres environmental groups agreed not to oppose projects within the development footprints; but can comment on regional planning efforts and the projects. Terry has an ongoing role overseeing implementation of the Agreement, including early role forming and managing the Conservancy formed by the Agreement. The Agreement provided the cornerstone of the Habitat Conservation Plan for a major portion of the Ranch; the Tejon Multi-Species Habitat Conservation Plan, TUMSHP, approved in April 2013. She recently joined the Board of the Tejon Ranch Conservancy created and funded by the Agreement.
- Orange County Wildlife Corridor. Project coordinator and architect for dialogue process between environmental and conservation organizations, City of Irvine and Lennar/Five Points development team that resulted in an 8 party Agreement, related general plan amendment and full funding to build an urban wildlife corridor to the specifications of the science team (6-member team jointly selected by all groups) connecting two high value conservation areas in central Orange County (Coastal and Eastern NCCP/HCP lands). Watt provides some ongoing implementation support. Recently (2017) coordinated DEIR comments letters on two Orange County Project proposals that could adversely impact the 5 Point/Irvine Wildlife Corridor.
- Ongoing assistance and authorship of expert comments on projects with recent letters on the proposed draft Amador County General Plan on behalf of the Foothill Conservancy and the proposed Squaw Valley Resort on behalf of a coalition of environmental and labor organizations.

- Facilitator to the Bolsa Chica Land Trust for recent agreement with Landowners to purchase remaining private acres of the Bolsa Chica uplands. Currently assisting with fundraising for the property.
- Advisor to the Nature Conservancy, the American Farmland Trust, Center for Law, Energy and Environment on numerous publications concerning urban infill and conservation.

PROFESSIONAL MEMBERSHIPS AND BOARDS

- Lambda Alpha International - Golden Gate Chapter
- American Institute of Certified Planners (AICP)
- American Planning Association (APA)
- Tahoe Fund Founding Board Member
- Tejon Ranch Conservancy Board Member
- Santa Lucia Conservancy Board Member
- Founder Council of Infill Builders
- Board Member, Planning and Conservation League

AWARDS

- State and National APA Awards for Marin County General Plan
- APA Awards for South Livermore Valley Plans
- Carla Bard Award for Individual Achievement, PCL

PUBLICATIONS

Contributor to the Award Winning Textbook:

Ecosystems of California, 2016, Chapter 40:

Land Use Regulation for Resource Conservation

EXHIBIT 5

Terrell Watt Planning Consultants
1937 Filbert Street
San Francisco, CA 94123
terrywatt@att.net
415-377-6280

January 19, 2021

Richard Drury
Lozeau Drury, LLP
410 12th Street, Suite 250
Oakland, CA 94607

RE: Comments on Final Environmental Impact Report for Proposed UCSF Comprehensive Parnassus Heights Plan

Dear Mr. Drury,

At your request, I have reviewed the Final Environmental Impact Report ("FEIR") for the proposed UCSF Comprehensive Parnassus Heights Plan ("Project") as well as the terms of a recent Agreement entered into by UCSF and the City of San Francisco. This comment letter includes comments by Jared Ikeda, who submitted comments on the DEIR and who has also reviewed the FEIR. Our review focused on the new Agreement as well as the adequacy of the FEIR's Master and comment letter-specific responses directed at our comments on the Draft EIR.

After carefully reviewing the FEIR for the Project we have concluded the FEIR fails in numerous respects to comply with CEQA and to fulfill CEQA's fundamental mandate. As described below, the FEIR violates this law because it fundamentally fails to adequately respond to our comments. The purpose of each response to a comment on the Draft EIR is to address the significant environmental issue(s) raised by each comment. Specifically, Section 15088(b) of the CEQA Guidelines requires that the written response describe the nature of the significant environmental issues raised. When the lead agency's position conflicts with recommendations and objections raised in the comments, the environmental issues must be addressed in detail giving reason why specific comments and suggestions were not accepted. Here, the Final EIR summarily dismisses many comments without addressing their merits.

In addition to the Final EIR's failure to adequately address numerous comments on the Draft EIR, a recent agreement between UCSF and the City of San Francisco fundamentally changes the Project Description. Specifically, the agreement commits UCSF to build 1,263 additional new units for faculty, students and staff, for a Project total of 2,025 new housing units. While

increasing the number of housing units in the Project may have beneficial implications, the fact is the numerous, potentially significant impacts associated with more than doubling the housing in the Project have not been analyzed. Potentially significant impacts caused by this substantial increase in housing units include, but are not limited to impacts to public services and facilities, impacts to parking, traffic and transit, aesthetic impacts and other impacts associated with a significant increase in population in the neighborhood. Moreover, as described below, the addition of these units to the Project destabilizes the Project as described in both the DEIR and FEIR, requiring recirculation of a Draft EIR that adequately analyzes the impacts associated with the changed Project.

I. The Final EIR Fails to Adequately Respond to Comments

As stated above, the fundamental purpose of each response to a comment on the Draft EIR is to address the significant environmental issue(s) raised by each comment. Specifically, Section 15088(b) of the CEQA Guidelines requires that the written response describe the nature of the significant environmental issues raised. When the lead agency's position conflicts with recommendations and objections raised in the comments, the environmental issues must be addressed in detail giving reason why specific comments and suggestions were not accepted. Here, the Final EIR summarily dismisses many comments without addressing their merits.

There is no better example of the FEIR's failure to adequately respond to comments than the Final EIR's response to comments on the Project's aesthetic impacts. Responses to comments documenting significant impacts associated with the Project contend that placing a 294 foot tower in a residential neighborhood has no aesthetic impacts whatsoever. Comments are disregarded based on UC's argument that it need not comply with local planning, zoning and other regulations. This massive non-conformity – a nearly 300 foot tower – clearly causes a significant impact as documented in comments submitted by Jared Ikeda, me and many other commentors.

Comments concerning the significance of visual impacts are further dismissed based on the following responses:

- Visual simulations submitted in comments by Jared Ikeda are not the same as a ground-level observer would see.
- Simulations misrepresent the effect of the proposed new hospital. The new hospital would certainly be visible from these locations, but it would take up a small portion of the horizon and only from Tank Hill would the new building obscure any ocean view at all from publicly accessible viewpoints.
- The trailhead at Farnsworth would be partially obscured by vegetation and narrow field of view and is not a high quality viewpoint and visual change is not considered significant.

- UCSF is constitutionally exempt from local land use regulations and therefore not required to undergo review by City of San Francisco Planning Dept Urban Design Advisory Team or conform to policies, principles and other provisions concerning land use and aesthetics.

None of these responses address the pure fact that the Project's nearly 300 foot tower will result in significant visual impacts. Specifically, the preparation of visual simulations using Google Earth was intended to provide context to the visual impacts from the proposed building height and mass of the new hospital. The proposed new hospital at 16 stories and 294 feet in height is clearly shown by the before and after figures to radically alter the scenic quality from different nearby viewpoints. Simulations submitted by Jared Ikeda in comments on the DEIR illustrate that the proposed building mass changes the view scenery significantly. While not ground-level simulations, the simulations illustrate the expected change in scenery and provide the visual context from these locations. The fact that the views will be changed is irrefutable and cannot be denied or put aside as insignificant. In certain locations within the neighborhood as illustrated by the simulations submitted in comments on the DEIR, the view is blocked by the new structure in some cases and radically altered in others. The different simulations that were provided in comments demonstrate these conditions. The notion that vegetation and other features may partially obscure the view of the new hospital does not change the fact that there will be a change to the view and scenic qualities at the Farnworth Trail as well as other publicly accessible viewpoints and the neighborhood.

The argument that the proposed plan is constitutionally exempt from local land use regulations does nothing to the address the fact that the Project significantly impacts the view from publicly accessible viewpoints and the general neighborhood. It is a specious argument to say that because University is not required to undergo a review with the City's Urban Design Advisory Team or comply with the City's rules, that there are no significant impacts associated with this massive tower. The Final EIR simply fails to adequately respond.

The Final EIR states that the new hospital would be visible from various publicly accessible viewpoints but concludes that these scenic vistas would not be substantially or adversely impacted. Clearly the massive new hospital structure will significantly alter views and is out of scale with the neighborhood, but because the Final EIR does not agree, feasible mitigation measures and alternative capable of reducing or eliminating these impacts are also disregarded (e.g., reducing the height of the new hospital, off-site options for the new hospital component of the Project).

Moreover, compliance with the City of San Francisco's adopted policies and regulations remains a key indicator of whether the Project is or is not compatible with the surrounding neighborhood. UCSF clearly understood the breaking point for compatibility in its 1976 Regents' Resolution. Recognizing the unique and constrained location the Parnassus Heights

campus occupies, the Regents adopted a sensible "space ceiling" for the campus in its 1976 Regents Resolution, stating in pertinent part:

- "The total structures within the campus boundaries shall not exceed 3.55 million gross square feet (not including space committed to residential use on Third, Fourth, Fifth and Parnassus Avenues and Kirkham and Irving Streets) and this limit shall be permanent."

In addition, the Resolution recognizes the transportation problems in the area and commits funds to develop a plan to alleviate transportation problems including traffic, parking congestion and lack of transit. The Final EIR cannot dismiss significant impacts based on UCSF's disregard for City policy and regulations. The additional housing units will further strain this constrained neighborhood by increasing population and in turn putting additional demands on the transportation system and other support systems. The demands from additional housing can feasibly be offset by a reduced or relocated hospital so that the overall Project stays within the constraints and limitations of this unique neighborhood.

II. The DEIR Should be Revised and Recirculated to Address UCSF's Commitment to Build 1,263 New Housing Units

A fundamental requirement of CEQA is that an EIR contain an accurate, complete and stable project description. Without a complete and stable project description, an agency and the public cannot be assured that all the project's environmental impacts have been revealed and mitigated. Further, CEQA and the CEQA Guidelines mandate that an EIR include a description of the "physical environmental conditions . . . from both a local and a regional perspective. . . Knowledge of the regional setting is critical to the assessment of environmental impacts." CEQA Guidelines Section 15125(a) and (c). This requirement derives from the principle that without an adequate description of the project's local and regional context, the EIR – and thus the decision-makers, agencies and public who rely on the EIR – cannot accurately assess the potentially significant impacts of the proposed Project.

Although the Final EIR responses summarily and improperly dismissed the argument that the Project Description is in flux due to COVID-19, there is no mistaking the significant change to the Project the addition of 1,263 new housing units for students, faculty and staff means. More than doubling housing constitutes a huge change in the Project as well as its overall impacts. As a result of this Agreement between UCSF and San Francisco, a revised and recirculated DEIR is required to address among other likely significant impacts, impacts to public services and facilities (including schools), traffic, parking and transit, as well as aesthetic and other impacts associated with such a massive increase in the scale of the project. This change in the Project also changes the analysis in the Draft and Final EIR's of the projects growth inducing effects since the new housing fundamentally changes the prior analysis. For example, 1,263 new units will have a multiplier effect in terms of public services and facilities needed in the neighborhood, including but not limited to parks and open space, schools and essential

services. This and other impacts must be analyzed in an environmental document, preferably a revised DEIR, that is circulated for public review and comment. A revised DEIR presents the opportunity to include an adequate growth inducing analysis and analysis of population and housing, missing from the DEIR and dismissed in the FEIR as too speculative. For a Project that will guide development of the campus for 30+years and likely be the basis of streamlined permitting for project facilities and infrastructure, it is especially important that the DEIR comprehensively identify and analyze its impacts on growth, population, housing and employment.

III. The FEIR Improperly Dismisses Feasible Alternatives

Alternatives are optional ways that the Project could achieve most of the objectives while also reducing or eliminating the environmental impacts of the Project. (California Public Resources Code Section 21002). The Final EIR improperly dismisses numerous alternatives as infeasible based on objectives alone, including off-site alternatives -- such as building the hospital at the Hunter's Point Candlestick Park site -- that reduce significant impacts associated with the Project.

The fundamental mandate is that "public agencies should not approve projects if there are feasible alternatives or feasible mitigation measures available which would substantially lessen the significant environmental effects of the project" (PRC Section 21002, 21081). Government agencies are required to consider alternatives to proposed actions affecting the environment. (PRC Section 21001 (g)). Alternatives need not meet all of the objectives and their fundamental purpose is to reduce or eliminate Project impacts.

Alternatives may not be rejected merely because they fail to meet some of the project objectives, are beyond an agency's authority, would require new legislation or would be too expensive. An alternative may be eliminated from further review where it fails to meet most of the basic project objectives; is infeasible; does not avoid significant environmental impacts; and implementation cannot be reasonably ascertained or is remote and speculative. (CEQA Guidelines Section 15126.6 (f)).

Feasible alternatives to the Project, improperly dismissed by the Final EIR, that would reduce or eliminate significant Project impacts should be reinstated for consideration including the following:

- No New Hospital at Parnassus Heights Campus Site and instead one of the following:
    - Implement Phase 2 of Medical Center at Mission Bay Campus Site.
    - New Hospital at Mount Zion Campus Site.
    - Seton Hall Hospital Facility, which stands empty.

- New Hospital at Hunters Point at the Candlestick site formerly slated for a new shopping mall. Locating the new hospital here would avoid many of the impacts associated with the Parnassus site, and would have may co-benefits such as providing jobs in and health services to an underserved and disadvantaged community.

The reasons provided in the Final EIR for dismissing these alternatives largely come down to whether or not the alternative met narrowly drafted Project objectives. The opportunity to revise and recirculate the DEIR to include 1,263 units of additional new housing, also provides an opportunity to address the shortcomings in the alternatives analysis. The DEIR Must be Revised and Recirculated.

Decision makers and the public cannot possibly assess the Project's impacts through the present DEIR and FEIR, both riddled with omissions, errors and inconsistencies. Among other fundamental deficiencies, both DEIR and FEIR repeatedly understate the Project's significant environmental impacts and therefore fail to formulate feasible mitigation to reduce these impacts. To resolve these issues, a revised DEIR that would necessarily include substantial new information must be prepared and recirculated.

Sincerely,

Terry Watt

Terry Watt, ACIP

EXHIBIT 6

From: Tom Lippe
To: "diane.wong@ucsf.edu"
Bcc: "Greg Kamman"
Subject: NHPH Draft EIR
Date: Friday, January 28, 2022 3:25:00 PM

Dear Ms Wong,

The NHPH Draft EIR refers to two documents:

- At page 4.9-26: Arup, 2021. Final UCSF New Hospital at Parnassus Heights Storm Drainage Design Report. December 6, 2021.

- At Appendix HYDA; page 2 of 13: Arup, "UCSF NHPH Combined Sewer System Modeling Updates", November 1, 2021

Please provide these documents to me as soon as possible.

Thank you,

Tom Lippe
Law Offices of Thomas N. Lippe APC
201 Mission St., 12th Floor
San Francisco, CA 94105
Tel 415 777-5604 x 1
Fax 415 777-5606
e-mail: lippelaw@sonic.net
Web: www.lippelaw.com

EXHIBIT 7

From: Tom Lippe
To: "diane.wong@ucsf.edu"
Subject: RE: NHPH Draft EIR
Date: Friday, February 4, 2022 11:16:00 AM

Ms Wong,
I represent San Franciscans for Balanced and Livable Communities regarding this EIR.
This is my second request for two documents referenced in the NHPH Draft EIR:

- At page 4.9-26: Arup, 2021. Final UCSF New Hospital at Parnassus Heights Storm Drainage Design Report. December 6, 2021.
- At Appendix HYDA; page 2 of 13: Arup, "UCSF NHPH Combined Sewer System Modeling Updates", November 1, 2021

Please provide these documents to me immediately so that I and my client can review and comment on the Draft EIR's analysis of impacts on water quality.
Thank you,
Tom Lippe

Law Offices of Thomas N. Lippe APC
201 Mission St., 12th Floor
San Francisco, CA 94105
Tel 415 777-5604 x 1
Fax 415 777-5606
e-mail: lippelaw@sonic.net
Web: www.lippelaw.com

From: Tom Lippe <lippelaw@sonic.net>
Sent: Friday, January 28, 2022 3:25 PM
To: 'diane.wong@ucsf.edu' <diane.wong@ucsf.edu>
Subject: NHPH Draft EIR

Dear Ms Wong,

The NHPH Draft EIR refers to two documents:

- At page 4.9-26: Arup, 2021. Final UCSF New Hospital at Parnassus Heights Storm Drainage Design Report. December 6, 2021.

- At Appendix HYDA; page 2 of 13: Arup, "UCSF NHPH Combined Sewer System Modeling Updates", November 1, 2021

Please provide these documents to me as soon as possible.

Thank you,

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Law Offices of Thomas N. Lippe APC
201 Mission St., 12th Floor
San Francisco, CA 94105
Tel 415 777-5604 x 1
Fax 415 777-5606
e-mail: lippelaw@sonic.net
Web: www.lippelaw.com

EXHIBIT 8

From: Tom Lippe
To: "EIR@ucsf.edu"
Cc: "diane.wong@ucsf.edu"
Bcc: "Greg Kamman"
Subject: RE: NHPH Draft EIR
Date: Monday, February 7, 2022 10:53:00 AM

I represent San Franciscans for Balanced and Livable Communities regarding this EIR.
This is my third request for two documents referenced in the NHPH Draft EIR:

- At page 4.9-26: Arup, 2021. Final UCSF New Hospital at Parnassus Heights Storm Drainage Design Report. December 6, 2021.
- At Appendix HYDA; page 2 of 13: Arup, "UCSF NHPH Combined Sewer System Modeling Updates", November 1, 2021

Please provide these documents to me immediately so that I and my client can review and comment on the Draft EIR's analysis of impacts on water quality.
Thank you,
Tom Lippe

Law Offices of Thomas N. Lippe APC
201 Mission St., 12th Floor
San Francisco, CA 94105
Tel 415 777-5604 x 1
Fax 415 777-5606
e-mail: lippelaw@sonic.net
Web: www.lippelaw.com

From: Tom Lippe <lippelaw@sonic.net>
Sent: Friday, February 4, 2022 11:17 AM
To: 'diane.wong@ucsf.edu' <diane.wong@ucsf.edu>
Subject: RE: NHPH Draft EIR

Ms Wong,
I represent San Franciscans for Balanced and Livable Communities regarding this EIR.
This is my second request for two documents referenced in the NHPH Draft EIR:

- At page 4.9-26: Arup, 2021. Final UCSF New Hospital at Parnassus Heights Storm Drainage Design Report. December 6, 2021.
- At Appendix HYDA; page 2 of 13: Arup, "UCSF NHPH Combined Sewer System Modeling Updates", November 1, 2021

Please provide these documents to me immediately so that I and my client can review and comment on the Draft EIR's analysis of impacts on water quality.
Thank you,

Tom Lippe

Law Offices of Thomas N. Lippe APC
201 Mission St., 12th Floor
San Francisco, CA 94105
Tel 415 777-5604 x 1
Fax 415 777-5606
e-mail: lippelaw@sonic.net
Web: www.lippelaw.com

From: Tom Lippe <lippelaw@sonic.net>
Sent: Friday, January 28, 2022 3:25 PM
To: 'diane.wong@ucsf.edu' <diane.wong@ucsf.edu>
Subject: NHPH Draft EIR

Dear Ms Wong,

The NHPH Draft EIR refers to two documents:

- At page 4.9-26: Arup, 2021. Final UCSF New Hospital at Parnassus Heights Storm Drainage Design Report. December 6, 2021.

- At Appendix HYDA; page 2 of 13: Arup, "UCSF NHPH Combined Sewer System Modeling Updates", November 1, 2021

Please provide these documents to me as soon as possible.

Thank you,

Tom Lippe
Law Offices of Thomas N. Lippe APC
201 Mission St., 12th Floor
San Francisco, CA 94105
Tel 415 777-5604 x 1
Fax 415 777-5606
e-mail: lippelaw@sonic.net
Web: www.lippelaw.com

EXHIBIT 9

BRUNZELL
HISTORICAL

September 10, 2020

Law Offices of Thomas N. Lippe APC
201 Mission St., 12th Floor
San Francisco, CA 94105

RE: Comments on Draft Environmental Impact Report for Proposed UCSF Comprehensive Parnassus Heights Plan

Dear Mr. Lippe,

At your request, I have reviewed the Draft Environmental Impact Report ("DEIR") for the proposed UCSF Comprehensive Parnassus Heights Plan ("Project"). My review focused on the DEIR's treatment of historical resources.

INTRODUCTION

In March 1995, California's State Office of Historic Preservation (SHPO) published *Instructions for Recording Historical Resources,* which was intended to provide official guidelines for the systematic recordation of cultural resources. The document establishes the DPR 523 series forms as the universal format for recordation of all types of cultural resources as well as for the evaluation of historical resources. It provides detailed methodological instructions for historical resource evaluation using these forms. *Instructions for Recording Historical Resources* is widely utilized by qualified professional architectural historians and historians as a manual for the proper production of such evaluations for historical resource located in California. The majority of California's state and local agencies (including Caltrans, the Department of General Services, and most city/county governments) require production of DPR 523 forms according to the standards outlined in this document. (A few agencies have adopted their own local guidelines for historical resource evaluation.) Larger agencies often have professionally qualified historians/architectural historians on staff who review historic resource evaluations to ensure proper preparation by professionally qualified consultants. Smaller agencies (such as small cities) typically require a peer review for historical resource evaluations (especially where a historical consultant is employed directly by a project proponent.) Proposed projects subject to CEQA review will not move forward under most California agencies until:

1. professionally qualified staff approves a historical evaluation, OR
2. peer review-identified deficiencies in a historical evaluation are addressed.

6

The letter report that follows outlines deficiencies in the DEIR's treatment of historical resources according to the *Instructions for Recording Historical Resources* as well as departures from generally accepted professional standards. A comprehensive historical resource study of a complex campus like this one should be undertaken for planning purposes and in order to outline appropriate maintenance plans for historical resources even in the absence of an undertaking that qualifies as a project under CEQA. The current project outlined by the DEIR proposes demolition or alteration of several historic-age buildings that were either recommended ineligible or not evaluated in the

7

studies; deficiencies in the historical resource evaluations must therefore be corrected in order to comply with CEQA. Moffitt Hospital (1955) designed by Milton T. Pflueger, Proctor Foundation (1956) designed by Higgins & Root, Medical Building 1 (1972) designed by Reid Rockwell Banwell, & Tarics, and the School of Nursing (1972) designed by George Matsumoto have all been recommended ineligible. Millberry Union Garage (1955) has never been evaluated. Demolition of these buildings cannot proceed until they have been properly evaluated according to professional standards. Specific flaws in the historical studies are discussed in detail below. The most significant deficiencies fall under the following categories:

1. Historical Resource Evaluations do not meet professional standards
2. Technical studies fail to evaluate the campus as a potential historic district
3. Historical resources were not evaluated or were evaluated before they were age-eligible

7 cont.

HISTORICAL RESOURCE EVALUATION DO NOT MEET PROFESSIONAL STANDARDS

The DEIR's treatment of historical resources is based on two technical reports, both prepared by Carey & Co. Inc. Architecture: *UCSF Parnassus Heights Campus, San Francisco, California, Draft Historic Resources Evaluation, September 2003* and *UCSF Historic Resources Survey, San Francisco, California, February 8, 2011*. Carey & Co. Inc. Architecture is a well-respected firm that employs professionally qualified architectural historians and historic architects. However, neither of their UCSF studies meets currently-accepted professional standards for historical evaluation, nor does either study conform to the standards outlined in *Instructions for Recording Historical Resources.*

8

Study Design Flaws

The DEIR and its technical reports are required under CEQA to evaluate all historic-age buildings on the Parnassus Heights Campus for potential eligibility to the National Register of Historic Places (NRHP) and the California Register of Historical Resources (CRHR). Neither study undertook evaluation of all buildings and structures that had reached historic age in 2003 and 2011 (when the studies where completed); no rationale or explanation is offered for this failure to undertake a comprehensive study (or two studies that would together comprehensively document the site's historical resources.)

The boundaries of each study should be clearly delineated; a lack of appropriate maps and graphics obscure the boundaries of the study area for both technical studies.

9

Details of each technical report are discussed in below.

Carey & Co, September 2003

The intensive survey undertook the evaluation of seven buildings on Parnassus Heights Campus that were over 45 years old and slated for demolition or other significant impacts. Milberry Union Garage was 48 years old but was excluded from the study without rationale.

A typical professionally-prepared historical evaluation report would include (at a minimum) a location map showing the site's relationship to the region and a more detailed map showing building footprints and site layout with all features clearly labeled. Most consultants would also provide additional maps (including historic aerial photographs/site plans as well as custom graphics) to visually demonstrate eras of development, historical site plans, and other relevant information. The maps in DPR 523 forms highlight each building individually and are inadequate for a basic understanding of the site as a whole.

10

Carey & Co, February 2011
The intensive survey undertook the evaluation of 53 buildings located on Parnassus Heights Campus as well as four other UCSF sites. A superficial review of the document would suggest that all the historic-period buildings on the Parnassus Heights Campus were included in the study, but several were excluded. No rationale is provided for why a number of buildings were excluded from the report. It is apparently focused on buildings not included in the 2003 survey. If that is the reason for the omission of many historic buildings from the 2011 study, the reason should be explained, the results of the 2003 study summarized and updated where necessary, and the previously prepared DPRs appended. The preparers appropriately reference a handful of unrelated previous studies for specific buildings but do not reference their own company's document of a decade earlier. "Appendix B. List of Buildings, Building Types, and Significance" appears to be intended as a complete list of buildings on the campus since it includes most of the buildings evaluated in the earlier study, but one of the oldest and most significant buildings on campus (UC Hall) is missing. A reader of this study who was not intimately familiar with the site could potentially be unaware that several buildings on the campus had previously been determined eligible to the NRHP.

11

The structure of the report, in which UCSF's various campuses are discussed under subheadings, is extremely awkward and confusing. If these disparate sites were to be handled appropriately in one report (an extremely challenging task), a substantial historic context focused on the administrative and institutional history would be required in order to explain how the disparate locations are related and why the institution spread to multiple locations. Rigorous hierarchical organization of this complex information could have made this report much more comprehensible.

The boundaries of a survey should be clearly delineated (ideally in graphics and in text) and a rationale provided when portions of a site such as a campus are excluded. Although a "survey area" is referenced in the technical report it is not mapped or otherwise defined within the body of the report. Adequate maps were included in the appendix, but would have been much more useful integrated into the text as exhibits.

Historic Context Deficiencies
Instructions for Recording Historical Resources defines historic context and clearly states its centrality to the evaluation of historical resources.

> The significance of a historical resource is best understood and judged in relation to a historic context. A historic context consists of: theme, pattern, or research topic; geographic area; and chronological period. The theme, pattern or research topic provides a basis for evaluating the significance of a resource when it is defined in relation to established criteria. A historical resource is considered significant, and hence, eligible for the National Register if it is associated with an important historic context… (SHPO 1995, 9).

12

"The statement of significance should explain why the resource is important in relation to its historic context(s)" (SHPO 1995, 12).

The above professional guidance demonstrates that the DEIR and its technical reports should include historic context and a brief site history that describes the eras of development. A historic context statement has a specific purpose: providing a framework that allows for assessment of historical significance of the built environment. The Parnassus Heights Campus was developed

beginning in the 1890s and therefore the most relevant era its evaluation is 1890 – 1970. An understanding of the Parnassus Heights Campus sufficient for historical evaluation would require (at a minimum) brief historic contexts of: medical education in the US, the City of San Francisco, the UC system, and UCSF as an institution as well as a site history describing the evolution of the campus built environment. These various contexts would typically be separated thematically, and clearly-defined periods of significance would be established in order to provide the required framework for evaluation and to organize complex report information into a comprehensible format. The DEIR's full page of discussion of the Spanish, Mexican and Early American periods of California history (UCSF 2020, 4.4-3) ends in 1850 and thus does not add to the reader's understanding of potential project impacts on historical resources and should be eliminated or condensed. The four-paragraph site history (UCSF p. 4.4-4) fails to explain the importance of the site, outline its periods of development, or even to describe its construction history in adequate detail. These serious flaws in the DEIR text stem from the failures of the technical reports to address historic context according to professional standards as discussed in detail below.

12 cont.

Carey & Co, September 2003

While there is no specific length requirement for a historic context, the Historical Overview section (Carey & Co 2003, 5 – 13) is inadequate to the purpose of the document according to current professional standards. It does not attempt to place the campus and UCSF within the context of the University of California, American medical education, or the development of other medical schools within the region. Biographical information on the few important individuals it names is too minimal to provide an understanding of their professional accomplishments or impact on the campus. The narrative provided is mainly a site history, with dates and descriptions of construction projects connected thinly by background information and a very small number of historic photographs. It does not fully explain why specific buildings were constructed at particular times.

The report is focused on buildings slated for demolition, a significant flaw. While the buildings not threatened by projects planned at the time of the study could have been exempted from detailed evaluation, they should have been included in the site history and historic overview. The narrative history of the campus simply does not make sense without a broad discussion of the development of the site. The historical information presented is based on just four sources, two of which are UCSF planning documents, and almost the entire narrative appears to have been adapted from a history on the UCSF website. No specific number of references is required, but a historian who meets the professional standards for this type of work would be expected to consult multiple primary sources (e.g. newspapers, maps, photographs, university correspondence) as well as secondary sources like published histories and journal articles.

13

The historic context section for a professionally-prepared historical evaluation would provide at least a paragraph on each architectural style present on the property, discussing its development, period of use, and character-defining features. Master architect's professional biographies provided are minimally adequate. Architects not assumed to be masters, furthermore, should have been discussed; if the preparer has concluded an architect was not significant, evidence demonstrating this must be provided. This information would assist in comparative analysis that should be undertaken to determine whether buildings are important for their architecture.

Carey & Co, February 2011

The opening line of the introduction to the Carey & Company report acknowledges the essentiality of historic context to historical evaluation of this site: "UCSF has engaged Carey & Co. to produce a

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comprehensive historic context of the UCSF campuses…" (Carey & Co. 2011, 1). Preparers go on to describe the themes and research methodology used to produce this historic context. Themes identified in the introduction are "the history of the University of California, the Affiliated Colleges, and UCSF; the development of the neighborhood immediately adjacent to the Parnassus Heights campus; …and mid-century modernist and Bay Tradition architecture (Carey & Co. 2011, 3)." The preparers list primary- and secondary-source references consulted as including "historical maps; the United States census and the California Register of Voters; historic photographs; Calisphere, an online repository of primary sources from archival repositories throughout the state of California; correspondence with architects involved in the creation of buildings at the Parnassus Heights campus; and historic publications, including newspapers, journals, and books." Preparers also conducted research through the Environmental Design Archives at the University of California, Berkeley, UCSF archives, and the NWIC (SHPO's repository for cultural resource studies.)

The historic context of the neighborhood adjacent to campus (Carey & Co. 2011, 9-19) is adequately addressed and placed generally within the context of San Francisco's development. Although (like the DEIR) it is too focused on the period between the prehistoric era and the 1860s (since the campus was not developed until the 1890s) the themes in this section are detailed, well-footnoted, and appear to be based on substantial research. However, despite the preparers' clear demonstration in this section and in the introduction of a professional understanding of historic context requirements, sections devoted to the campus proper are too brief, poorly referenced, and disorganized.

No report section is devoted to the important historic context of the University of California despite its introduction by preparers as an important theme; its establishment and first thirty years of history are not discussed and it is merely mentioned as seeking land for a medical college in the 1890s (Carey & Co. 2011, 13). And the University of California is barely referenced as the report progresses. The history of the Affiliated Colleges (another theme introduced by the preparers as significant) receives two brief paragraphs (Carey & Co. 2011, 13-14) sandwiched between sections about the city and neighborhood. No references are provided for this bare-bones history of the inception of the site.

UCSF's history is never introduced in its own heading, but rather is discussed under the heading Postwar Expansion (Carey & Co. 2011, 16 -19). The section begins with a paragraph discussing site history *before* the postwar era (between 1890 and 1945) which provides no explanatory context for construction projects, no institutional history, and includes just one build date. UC Hall (1917) is mentioned briefly with no discussion of when it was built, why it was built, or who designed it. Historical resources like Clinical Sciences (1933) and Faculty Alumni House (1915) are not mentioned (here or elsewhere in the context), nor are the significant Zakheim murals. Important historic contexts like the 1920s master plan and development of the site in the Great Depression are never introduced.

The postwar site history that follows is far too brief for a site of this complexity. An adequate architectural history is provided, discussing designers, styles, materials, and building materials in appropriate detail. Sufficient historic context, however, is lacking, and the reader is given only the most glancing view into subjects like medical research on the campus, changes to medical education over time, establishment of UCSF as an independent campus in 1964, and the demographics of the student body. References are scanty; site history paragraphs have no footnotes and for architectural history no contemporaneous sources are cited prior to the 1960s. Few of the sources listed in the

14 cont.

methodology section are referenced in footnotes, and Wikipedia (not typically used as a reference by professional historians) is cited in one footnote. Rather than synthesizing multiple sources and providing analysis about the architecture of the School of Dentistry Building (which was constructed only 31 years prior to the study and therefore should not have been a main subject), the preparers quote the project architect for several unbroken paragraphs (Carey & Co. 2011, 20-22).

Organization of this section (the most important in the report) is chaotic, forcing the reader to skip from page to page in order to gain a coherent understanding of the information presented. LPPI (1941-3), Medical Sciences (1954), Moffitt Hospital (1955), and Surge (1966), and Health Sciences (1964-6) are all discussed under the main Postwar Expansion heading. The School of Nursing (1972) and School of Dentistry (1980) each receives its own section. As in the sections introductory paragraph, themes are often discussed using confusing backward-looking language rather than straightforward chronological narrative. For example, discussing the growth of the postwar student population, "In addition to benefiting from new revenue sources, resulting in expanded research programs and raising the prestige of the university, UCSF reintroduced the first two years of instruction to the San Francisco campus; since the 1906 earthquake, general courses in anatomy, biochemistry, and physiology had been taught at the Berkeley campus" (Carey & Co. 2011, 22).

14 cont.

Individuals important to UCSF history are not introduced in the narrative except a single reference to a provost that lists his dates of employment, birth, and death but does not explain his significance. Later in the report, several important individuals are listed with only names and dates of birth and death. The report should include a paragraph for each describing their professional accomplishments and impact on the campus.

Evaluation Deficiencies

Instructions for Recording Historical Resources states that:

> Evaluation requires three basic steps: (1) identification of a significant historic context associated with the resource; (2) identification of the types of resources important in illuminating that context, and the physical characteristics those resources must possess to reflect the significance of the historic context; and (3) an assessment of whether the resource being evaluated has those required physical characteristics (SHPO 1995, 10)

Since the DEIR and its technical reports did not establish adequate historic contexts (as discussed in detail above), evaluations for historic significance (Criterion A/1 and Criterion B/2) have not been undertaken to a standard that meets the basic requirements of CEQA. Both Carey & Company reports do not even bother to specifically evaluate many of the resources in the study under Criteria A/1 and B/2. Where buildings have been found architecturally significant, this can be dismissed as a technical deficiency that does not affect the outcome for the building (since a resource is eligible if it meets one *or more* criteria).

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For some buildings recommended ineligible, however, only a conclusory statement that the building "does not appear to be eligible" under the first two criteria is provided without reference to supporting evidence.

The 2003 evaluation of Moffitt Hospital states "At the time of its completion, Moffitt Hospital was the largest and most modern teaching hospital in the western United States" but does not go on to explain why if that is true it is not historically significant. It asserts that the building's designer was "renowned San Francisco architect Milton Pflueger" and says the building is not one of his

masterworks without offering any comparative analysis to support this assertion. It states that the building lacks integrity, but does not specifically document original condition and alterations (Carey & Co. 2003 Appendix A).

The study's evaluation of the Proctor Foundation offers a statement that the building is not eligible for its architecture without any evidence or analysis. It is even weaker in it evaluation under A/1 and B/2: it does not cite specific evidence or even make a definitive recommendation of ineligibility, stating that "… research has not revealed whether the Foundation or Dr. Proctor have made contributions of the broad patterns of history significant enough to deem the building eligible for the California Register..."

The study's conclusions that these two buildings are ineligible do not meet professional standards because they are not supported by adequate investigations or evidence.

15 cont.

UCSF'S PARNASSUS HEIGHTS CAMPUS WAS NOT EVALUATED AS A HISTORIC DISTRICT

Instructions for Recording Historical Resources states that, [Historic] "Districts consist of a significant concentration or continuity of associated historical resources" (SHPO 1995, 15). California Public Resources Code section 5020.1, subdivision (h) provides a similar but more detailed definition of a historic district as "a definable unified geographic entity that possesses a significant concentration, linkage, or continuity of sites, buildings, structures, or objects united historically or aesthetically by plan or physical development." Preparers of the DEIR were clearly aware of the importance of looking at the campus as a whole. The document acknowledges districts as one of the important categories of historical resources in its Section 4.4.1 Definitions: "Architectural resources include buildings, structures, objects, and historic districts." Additionally, Section 4.1 (Aesthetics) describes the characteristics of the site in terms of "a collection of hospitals, medical office buildings, laboratories, service buildings, and housing which were constructed between the late 1910s and early 2000s" and divides the campus into six districts "based in part on existing land use patterns."

An adequate cultural resources DEIR section would bring a similar intellectual rigor to the investigation of the potential historical significance of the campus as an entity in its own right, using a district (or districts) to organize the discussion of the built environment's significance. This would allow the cultural resources section to reflect the spatial and historical relationships between buildings, the street grid, open spaces, and other features of the site. The DEIR and its technical reports did not look at the campus as a potential historic district, a failure to assess the campus as it exists in the real world. The attempt to evaluate each building individually without considering context, setting, or the site as whole means that the DEIR has not considered a potential historical resource: the Parnassus Heights Campus. This flaw reflects the failure of historical technical reports to evaluate the site as a historic district. The preparers clearly understand the importance of historic districts: the 2011 report recommends the early twentieth century neighborhood adjacent to the campus eligible as a historic district. Failure to evaluate the campus within a similar framework is not explained in the DEIR or its technical reports.

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HISTORICAL RESOURCES HAVE NEVER BEEN EVALUATED OR REQUIRE RE-EVALUATION

One historical resource, the Millbury Union Garage (1955) was not evaluated in either technical study. No rationale is provided for the DEIR's failure to evaluate this building. Any age-eligible building or structure can qualify as a historical resource; its use as a parking garage is not a valid reason to skip evaluation. Parking garages have been listed on the NRHP and every other level of

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historic register. CEQA requires the evaluation of this building prior to any project that may alter its character-defining features.

In addition to the flaws detailed above, several buildings slated for demolition by the DEIR were evaluated before they were age-eligible. (The historic period begins 50 years before the present and therefore changes every year. For planning purposes, 45 years is typically used to allow studies to remain relevant as a project moves forward over several years.)

Medical Building 1 (Ambulatory Care Center) and the School of Nursing were both constructed in 1972 and evaluated in 2010 when they were only 38 years old. Their evaluations stated that the buildings did not meet the Criterion G "exceptional significance" standard that applies to buildings of unusual importance before they age into the historic period. These buildings are now 48 years old and they must be re-evaluated under the regular criteria now that "exceptional significance" is not required for eligibility.

Moffitt Hospital (1955) and Woods (1962) were both evaluated in 2003. Both buildings were on the cusp of being considered historic-age at the time and are now 65 and 58 years old. Scholarship on postwar architectural styles has progressed substantially since the buildings were evaluated 17 years ago. The passage of additional time also allows for a fuller assessment of their potential historical significance. Both buildings should therefore be re-evaluated before demolition is undertaken.

Reevaluation (and initial evaluation for the Millbury Union Garage) of all of the buildings discussed in this section is required to meet minimum professional standards.

17 cont.

HISTORIC BUILDINGS MISSING FROM THE DEIR

Two buildings are identified on the SHPO's Built Environment Resource Directory (BERD) for San Francisco as "Determined eligible for separate listing through a consensus determination by a federal agency and the State Historic Preservation Officer." Buildings 2274 and 2275 "Children's Hospital" are listed at 501 Parnassus Avenue, and were studied in 2010. Their location is unclear, and they were not included in the DEIR or Carey & Co.'s technical reports. Unless they have been demolished since the 2010 study in which they were determined eligible, the DEIR needs to consider these buildings as historical resources.

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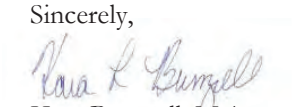
PREPARER'S QUALIFICATIONS

I meet the Secretary of Interior's Professional Qualifications for both History and Architectural History. I hold a Master's degree in Public History and have worked in multiple facets of historic preservation and cultural resource evaluation since 2007. My experience includes municipal preservation planning and working as the lead staff member of a non-profit preservation organization. Since 2012, I have worked full-time as a historical consultant, completing dozens of evaluations for CEQA and Section 106 compliance. Additionally, I regularly submit local and national register nominations, prepare historic context statements, and have managed HAER recordation projects. The greater Bay Area region is the center of my practice, but I frequently work in Sacramento, Santa Clara County, Monterey County, and Southern California. I have also completed projects in Oregon, Nevada, New York, and Puerto Rico. In addition to my work with historic-period residential, agricultural, and commercial properties for private clients, I have evaluated dozens of post offices and several military bases as well as university campuses, hospitals, church properties, and a NASA site. I am listed as a Historian and Architectural Historian on the

California Office of Historic Preservation's roster of qualified consultants for every county in California.

Please contact me by phone at 707/290-2918 or e-mail at kara.brunzell@yahoo.com with any questions or comments.

Sincerely,



Kara Brunzell, M.A.
Brunzell Historical

Appendix O-TL2
Comment Letter O-TL2 Appendix

Law Offices of
Thomas N. Lippe, APC

201 Mission Street
12th Floor
San Francisco, CA 94105

Telephone: 415-777-5604
Facsimile: 415-777-5606
Email: lippelaw@sonic.net

September 11, 2020

By Email: *EIR@ucsf.edu*
Ms Diane Wong
UCSF Real Estate - Campus Planning
654 Minnesota Street
San Francisco, CA 94143-0286

Re: Comprehensive Parnassus Heights Plan Draft Environmental Impact Report: Comments on Water Quality, Water Recreation, and Wastewater Public Services.

Dear Ms Wong:

This office represents San Franciscans for Balanced and Livable Communities (San Franciscans), a citizen's group composed of San Francisco residents. I write on its behalf to comment on the Draft Environmental Impact Report (DEIR) for the Comprehensive Parnassus Heights Plan (CPHP) with respect to its analysis of project impacts on water quality, water recreation, and wastewater public services.

This letter incorporates by reference the September 10, 2020, letter from Dr. Larry Russell, environmental engineer, which is attached hereto as Exhibit 1. In total, this letter attaches and incorporates 14 exhibits, which are listed at the end. Due to the size of Exhibit 13 and Exhibit 14, we are transmitting those it to you by email under separate cover.

The DEIR fails to assess the Project's impact on beach water quality, which is an important component of the Project's affected environment.

In Chapter 4.16, regarding potential impacts on wastewater treatment facility capacity, the DEIR discloses that the project will add about 2.0 million square feet of new space, and generate about 0.18 mgd (million gallons per day) of new wastewater/sewage. The DEIR assesses the impacts of this increase solely in terms of whether the increase will require the construction of new wastewater treatment capacity, the construction of which might cause secondary environmental impacts. The EIR concludes that construction of new wastewater treatment capacity will not be needed because:

> Assuming wastewater generation as 90 percent of water usage, the overall increase in wastewater resulting from the 2.0 million gsf net increase of building space associated with the proposed CPHP would be roughly 0.18 mgd. Wastewater flows from the Parnassus Heights campus site would be directed to the OSP [Oceanside Treatment Plant]. The OSP has a dry weather capacity of 43 mgd and is currently treating approximately 17 mgd. Therefore, based on current sewage flows, the plant has about 26 mgd of excess dry weather treatment

> capacity, which is adequate to accommodate the increase in flow generated by the net new development envisioned under the proposed CPHP. As a result, the proposed CPHP would not result in a determination by the SFPUC that it has inadequate capacity to serve the projected demand, and the impact would be less than significant. Mitigation: None required.

(DEIR p. 4.16-22 [pdf p. 672].)

With respect to stormwater discharge, Chapter 4.9 of the DEIR discloses that the campus drains both to the west to the Oceanside Treatment Plant (OSP) and to the east to the Southeast Treatment Plant (SEP) and that San Francisco operates a combined sewer system (CSS) that combines stormwater with sewage for treatment at these plants. This chapter concludes the Project's impacts on surface water quality are less than significant because the Project-induced increase in the acreage of impervious surfaces is only 4% compared to the current acreage of impervious surfaces on campus, and because the San Francisco Public Utilities Commission's (SFPUC) operation of the CSS, the OSP, and the SEP is regulated by the San Francisco Regional Water Quality Control Board (Water Board) through permits issued pursuant to the National Pollutant Discharge Elimination System (NPDES) established by the federal Clean Water Act and the state Porter-Cologne Water Quality Control Act.

The DEIR states:

> The campus core, where the majority of development and redevelopment under the CPHP is proposed, is largely developed and covered in impervious surfaces (estimated at approximately 86 percent impervious). Preliminary estimates indicate additional building development under the CPHP could incrementally increase the amount of impervious surfaces across the campus core by an additional 4 percent (about one acre) over existing conditions. Elsewhere on the campus site, the CPHP is not expected to notably increase impervious surfaces, as the proposed new housing buildings in the Aldea Housing complex would be sited largely within existing housing building footprints.

(DEIR p. 4.9-11.)

Using these numbers, one can calculate the number of current and future impervious acres in the campus core, as follows:

Table 1

Campus Impervious Surfaces	Percent of Campus	Acres
Pre-Project Condition	86%	21.5 acres
Project to Add	4%	1 acre
Post-Project Condition	90%	22.5 acres

The DEIR does not quantify the increase in stormwater discharge associated with this increase in impervious surface.

In addition to the quantified increase in impervious surfaces and unquantified stormwatrer runoff from the "campus core," the DEIR discloses that there will be additional increases in impervious surface outside the campus core. For example, the DEIR states:

> Development associated with the Irving Street Arrival, RAB, and initial Aldea Housing Densification projects, and Initial Phase improvements would be subject to the same or similar regulatory requirements as those described above during construction and operation. Furthermore, as applicable, any Initial Phase improvements that would be constructed outside the campus site boundary would be subject to construction site runoff requirements and post-construction stormwater controls in accordance with the City Public Works Code and in compliance with the City's Stormwater Management Ordinance. As such, the potential to violate water quality standards or waste discharge requirements, or otherwise substantially degrade surface or groundwater quality would be less than significant.

(DEIR, p. 4.9-12.)

This singularly uninformative paragraph indicates there will be additional increases in impervious surfaces in several different areas, including outside the campus boundary, but provides no clues as to their magnitude. As it did with the increases in runoff from the campus core area, the DEIR again does not quantify the increase in runoff associated with the increase in impervious surfaces. Also, while the paragraph intimates that UCSF's off-campus facilities will be subject to San Francisco's "post-construction stormwater controls," it provides no information on the extent to which these controls may be expected to reduce Project-generated operational increases in stormwater runoff.

As it does with Project-generated increases in sewage, the DEIR also relies on "the relatively small change" in Project-generated increases in stormwater discharge to conclude the impact is less than significant, stating:

> Due to the relatively small change in impervious surfaces and the flow reductions that would be achieved with the implementation of LID stormwater features, storm water flows from the campus site would not adversely affect stormwater drainage capacity. In fact, the CPHP includes upgrades to the existing CSS within the campus core as discussed further in Section 4.16, Utilities. Therefore, considering the minor change in impervious surfaces, incorporation of LID stormwater features, and proposed improvements to the existing CSS that would occur with the program, the potential impacts related to flooding on- or off-site, stormwater drainage capacity, or additional sources of polluted runoff would be

less than significant.

(DEIR, p. 4.9-14.)

There are many legal deficiencies in the DEIR's handling of the Project's impacts on water quality, water recreation, and wastewater related public services.

The DEIR fails to describe the most important components of the environmental and regulatory settings, which are the severely degraded water quality conditions at San Francisco's beaches, in both the bay and the ocean, and the demonstrated inability of San Francisco's CSS to prevent these conditions.

The DEIR fails to describe the Project in enough detail to inform any analysis of water quality impacts, most egregiously with respect to increases in impervious surfaces outside the campus core.

The DEIR's assessment pf Project impacts on water quality fails to account for the fact that sewage and stormwater are combined in the same pipes for conveyance to the OSP and SEP. Instead, the DEIR assesses these waste streams separately.

After committing these legal errors, the DEIR bases its conclusion that water quality impacts will be less than significant on two errors of law: the relatively small change in Project-generated increases in sewage and stormwater discharges (i.e., the "ratio theory") and reliance on another agency's regulatory program.

The DEIR fails to describe the severely degraded water quality conditions at San Francisco's beaches.

The SFPUC, in cooperation with the San Francisco Department of Public Health, routinely monitors shoreline bacteria (i.e., total coliform, e. coli or enterococcus) at 16 stations around the perimeter of San Francisco where water contact recreation occurs, including additional monitoring whenever a treated discharge from the City's combined sewer system occurs that affects a recreational beach. When monitoring shows that bacterial contamination exceeds state health standards, the affected beach is "posted" to discourage water contact recreation.

The SFPUC's beach water quality monitoring data from January of 2016 through June of 2020 shows that between January of 2016 and June of 2020, there were 131 days on which at least one ocean side beach was posted for exceeding state health standards for any of the three types of bacteria tested; 333 days on which at least one bay side beach was posted, and 464 days

on which at least one SF beach was posted.[1]

Figures 1 through 15, attached hereto, summarize the SFPUC's beach water quality monitoring data for the last 4 ½ years by presenting monthly totals of days on which San Francisco ocean side and bay side beaches exceeded state health standards for any of the three types of bacteria tested.[2] Figures 1 through 5 show monthly totals for San Francisco ocean side beaches between January 1, 2016, and June 30, 2016. Figures 6 through 10 show monthly totals for San Francisco bay side beaches for the same period. Figures 11 through 15 show monthly totals for San Francisco ocean and bay side beaches in this period.

- Blue bars show the number of days when at least one beach was posted for at least one exceedance of a state health standard.
- Yellow bars show the number of beach postings for exceedances of state health standards or due to combined sewer system (CSS) overflow.
- Red bars show the number of exceedances of any state health standard at any beach.

Table 2 [Summary of Figures 1-15]

January 1, 2016, through June 30, 2020	**Days when at least one beach was posted for at least one exceedance of a state health standard [Blue Bars]**	**Beach postings for exceedances of state health standards or due to combined sewer system (CSS) overflow [Yellow Bars]**	**Red bars show the number of exceedances of any state health standard at any beach [Red Bars]**
Ocean Side beaches	131	210	298
Bay Side beaches	333	546	936
Ocean and Bay Side beaches	464	756	1,234

Remarkably, the DEIR also fails to disclose that the waters of San Francisco Bay are listed as impaired for bacterial contamination under section 303(d) of the Clean Water Act, or that in 2016, the State Water Resources Control Board adopted a Total Maximum Daily Load for

[1]The SFPUC's raw water quality monitoring data for this time period is attached hereto as Exhibit 12.

[2]Ocean side beaches are: Baker, China, Ocean, and Fort Funston. Bay side beaches are: Crissy Field, Aquatic Park, Mission Creek, Candlestick Point State Recreation Area, and Islais Creek.

bacterial contamination for the bay.[3] Thus, any discharge that exceeds the City's load allocation for bacterial contamination violates the Clean Water Act.

Thus, the current environmental setting (i.e., baseline) at San Francisco's ocean side and bay side beaches is one of severe environmental degradation. The DEIR ignores this elephant in the room.

The DEIR fails to describe severely dysfunctional regulatory setting of San Francisco's sewage treatment plants.

The Water Board regulates San Francisco's operation of the OSP and SEP through NPDES permits. The OSP is governed by NPDES Permit No. CA0037681, by way of Water Board Orders R2-2009-0062 and R2-2019-0028 (attached as Exhibits 4 and 5, respectively).[4] The permit for the SEP is NPDES Permit No. CA0037664; Order No. R2-2013-0029 (attached as Exhibit 6).[5]

The NPDES permits require the SFPUC to submit monthly and annual self-monitoring reports (SMRs) to the Water Board, by online upload to the California Integrative Water Quality System database (CIWQS). The SMRs include raw data regarding water quality and narrative cover letters. The cover letters describe any instances of non-compliance of the permit. The CIWQS database also includes notices of violations issued by the Water Board.

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[3]The Water Board's Order and Basin Plan Amendment to establish a TMDL for Bacteria at San Francisco bay beaches are attached as Exhibits 2 and 3, respectively.

[4]Order No. R2-2009-0062 for the OSP became effective on October 1, 2009, and expired on September 30, 2014. The Water Board continued this permit's effective period administratively until November 1, 2019. R2-2019-0028 for the OSP became effective on November 1, 2019, for discharges to waters of the state from the OSP near-shore combined sewer discharge locations. The U.S. EPA, however, did not approve the jointly-issued order until December 10, 2019, with an effective date of February 1, 2020, for discharges to waters of the United States from the OSP deep water outfall (Discharge Point 001), which is 3.4 to 3.6 nautical miles offshore. The 'SFPUC' is challenging certain permit conditions in Order No. R2-2019-0028. The uncontested permit conditions that govern discharges into federal waters became effective on March 9, 2020.
Although the uncontested permit conditions for state waters for Order No. R2-2019-0028 became effective on November 1, 2019, the monthly self-monitoring reports for November and December of 2019 indicate that they continued to assess compliance against the R2-2009-0068 Order for these months regardless.

[5]Permit No. CA0037664 (Order No. R2-2013-0029) for the SEP became effective on October 1, 2013, and remains in effect at this time.

Notices of violations are issued for certain instances of non-compliance and not for others, suggesting either inconsistent enforcement or the existence of unknown, unpublished enforcement criteria.

For example, on February 6, 2016, a member of the public reported a strong odor of sewage coming from the combined sewer system outfall at Vicente Street on Ocean Beach, as well as discovery of sewage overflowing into the street at Wawona and 46th Street. These instances violate the permit (Order No. R2-2009-0062, Section 3.A. Order Conditions) and should have been issued a notice of violation as an unauthorized discharge of untreated wastewater. While this instance of non-compliance is reported, the Water Board did not issue a notice of violation.

Another instance of unauthorized unanticipated discharge occurred on October 17, 2016, when approximately 8,011 gallons of combined treated stormwater and wastewater was discharged from the Seacliff 2 Pump Station Outfall. The Water Board issued a notice of violation for this event (violation ID No. 1022988 as subsequently reported to CIWQS). The same pattern is apparent at the SEP.

My office has reviewed the Water Board's enforcement files for the period 2008 to 2014 and the period January 2016 through June 2020 for the NPDES permits issued to the SFPUC for operation of the OSP and SEP. This review identified all instances recorded in these files when the SFPU's operation of the OSP or SEP failed to comply with the terms of the applicable NPDES permit, including instances for which the Water Board issued a notice of violation and instances for which the Water Board did not issue a notice of violation.

Table 3 shows the total number of instances of non-compliance and notices of violations at each plant recorded in these files for the period between January 1, 2016, and June 30, 2020.

Table 3

Plant	Instances of Non-Compliance	Notices of Violation
OSP	71	8
SEP	100	36
Totals	1701	44

Exhibits 10 and 11 show all instances of non-compliance at the OSP and SEP recorded in these files for the period between January 1, 2016, and June 30, 2020.[6] The documents from the

[6]Exhibit 9 shows all instances of non-compliance with then applicable NPDES permits at the OSP and SEP recorded in the Water Board's enforcement files for the period between 2008 and 2014. The supporting documentation referenced in Exhibit 9 as "Ex #" is not included in this letter, but is available upon request.

Water Board's enforcement files evidencing these instances of non-compliance are attached as Exhibit 13, for the OSP, and Exhibit 14, for the SEP, and are referenced as such in Exhibits 10 and 11.

In short, for at least the past 10 plus years (i.e., the only period studied), San Francisco has consistently failed to comply with its NPDES permits for the OSP and SEP plants, including permit terms limiting bacterial contamination in the OSP's effluent discharges to the ocean and the SEP's effluent discharges to the bay.

The U.S. EPA sent two Notice of Violation letters to San Francisco in the fall of 2019 detailing the most egregious violations of federal and state water pollution control laws due to bacterial contamination. These letters are attached as Exhibits 7 and 8.

Remarkably, and egregiously, the DEIR ignores all of this. Therefore, the DEIR must be revised and recirculated to include an analysis of Project impacts on beach water quality based on these required categories of information to inform meaningful public comment.

The DEIR's reliance on the "ratio theory" is an error of law.

As discussed above, regardless of the DEIR's assertion that the OSP has sufficient *dry weather capacity* to meet current and projected demand, and regardless of the fact that San Francsico's CSS is regulated by NPDES permits enforced by the Water Board, there are many days every year when bacterial contamination in the waters at San Francisco beaches exceeds state health standards.

The DEIR's reliance on the relatively small increases in Project-generated sewage to be conveyed to the OSP and the relatively small increases in Project-generated stormwater to be conveyed to the OSP and SEP to conclude that the Project's water quality impacts are less than significant are errors of law. (*Communities For a Better Environment v. California Resources Agency* (2002) 103 Cal.App.4th 98, 114 ["the guiding criterion on the subject of cumulative impact is whether any additional effect caused by the proposed project should be considered significant given the existing cumulative effect"]; *Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692, 718.)[7]

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[7] The decision in *Kings County* repudiates the "ratio theory," stating:
The [ ] EIR concludes the project's contributions to ozone levels in the area would be immeasurable and, therefore, insignificant because the [cogeneration] plant would emit relatively minor amounts of [ozone] precursors compared to the total volume of [ozone] precursors emitted in Kings County. The EIR's analysis uses the magnitude of the current ozone problem in the air basin in order to trivialize the project's impact ... The relevant question to be addressed in the EIR is not the relative amount of precursors emitted by the project when compared with

The DEIR's reliance on San Francisco's NPDES permits is an error of law.

The DEIR to find that water quality impacts are less than significant based on the NPDES regulatory program, especially where, as here, that regulatory program is failing to prevent severe environmental harm, is another error of law. (*Ebbetts Pass Forest Watch v. California Dept. of Forestry and Fire Protection* (*Ebbetts Pass*) (2008) 43 Cal.4th 936, 957 (error to conclude that compliance with pesticide restrictions precludes significant impact); *Californians for Alternatives to Taxies v. Department of Food & Agriculture* (2005) 136 CaL.App.4th 1, 16.)

Thank you for your attention to this matter.

Very Truly Yours,

Thomas N. Lippe

Attached Figures

1-5: Monthly totals for San Francisco ocean side beaches between January 1, 2016, and June 30, 2016, of days on which San Francisco ocean side beaches exceeded state health standards for any of the three types of bacteria tested.

6-10: Monthly totals for San Francisco bay side beaches between January 1, 2016, and June 30, 2016, of days on which San Francisco bay side beaches exceeded state health standards for any of the three types of bacteria tested.

11-15: Monthly totals for San Francisco ocean and bay side beaches between January 1, 2016, and June 30, 2016, of days on which San Francisco ocean side and bay side beaches exceeded state health standards for any of the three types of bacteria tested.

Exhibits

1. Letter dated September 10, 2020, from Dr. Larry Russel.

2. California Regional Water Quality Control Board San Francisco Bay Region Resolution No. R2-2016-0021 Amending the Water Quality Control Plan for the San Francisco Bay

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preexisting emissions, but whether any additional amount of precursor emissions should be considered significant in light of the serious nature of the ozone problems in this air basin.

(*Kings County, supra,* 221 Cal.App.3d at 718).

Basin to Establish a Total Maximum Daily Load and Implementation Plan for Bacteria in San Francisco Bay Beaches.

3. Basin Plan Amendment to Establish a Total Maximum Daily Load and Implementation Plans for Bacteria at San Francisco Bay Beaches.

4. Order No. R2-2009-0062; NPDES No. CA0037681: Waste Discharge Requirements for the City and County of San Francisco Oceanside Water Pollution Control Plant (Southwest Ocean Outfall) and Collection System, Including the Westside Wet Weather Facilities.

5. Order No. R2-2019-0028; NPDES No. CA0037681: Waste Discharge Requirements and National Pollutant Discharge Elimination System Permit for City and County of San Francisco Oceanside Water Pollution Control Plant, Wastewater Collection System, and Westside Recycled Water Project.

6. Order No. R2-2013-0029; NPDES No. CA0037664: Southeast Water Pollution Control Plant, North Point Wet Weather Facility, Bayside Wet Weather Facilities, and Wastewater Collection System.

7. United States Environmental Protection Agency; Notice of Violation of National Pollutant Discharge Elimination System permits. October 2, 2019.

8. United States Environmental Protection Agency; Response Regarding Notice of Violation of National Pollutant Discharge Elimination System permits. November 21, 2019.

9. Summary of San Francisco NPDES Permit Violations: 2008-2014.

10. Summary of San Francisco Oceanside Treatment Plant NPDES Permit Violations: 2016-2020.

11. Summary of San Francisco Southeast Treatment Plant NPDES Permit Violations: 2016-2020.

12. SFPUC Beach Water Quality Monitoring data.

13. Selected San Francisco Regional Water Quality Control Board enforcement files for the period January 2016 through June 2020 for the NPDES permits issued to the SFPUC for operation of the Oceanside Treatment Plant (OSP).

14. Selected San Francisco Regional Water Quality Control Board enforcement files for the period January 2016 through June 2020 for the NPDES permits issued to the SFPUC for operation of the Southeast Treatment Plant (SEP) .

Figure 1. SF Ocean Side Beaches. 2016: Exceedance of state health standards for total coliform, e. coli, or enterococcus

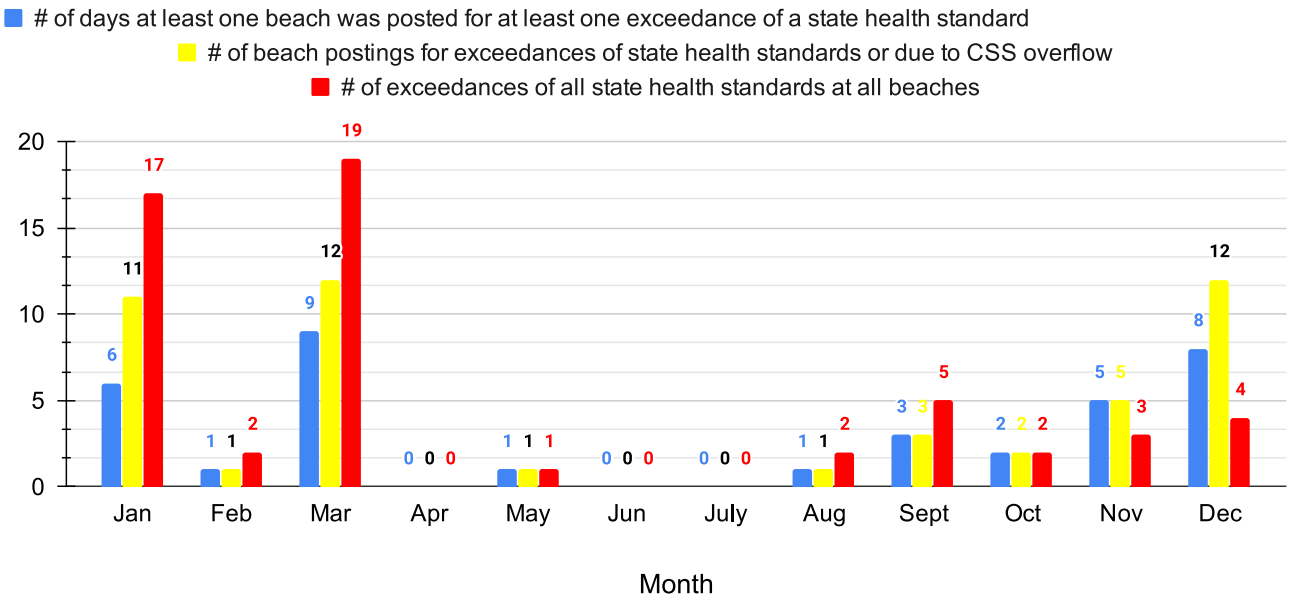

Figure 2. SF Ocean Side Beaches. 2017: Exceedance of state health standards for total coliform, e. coli, or enterococcus

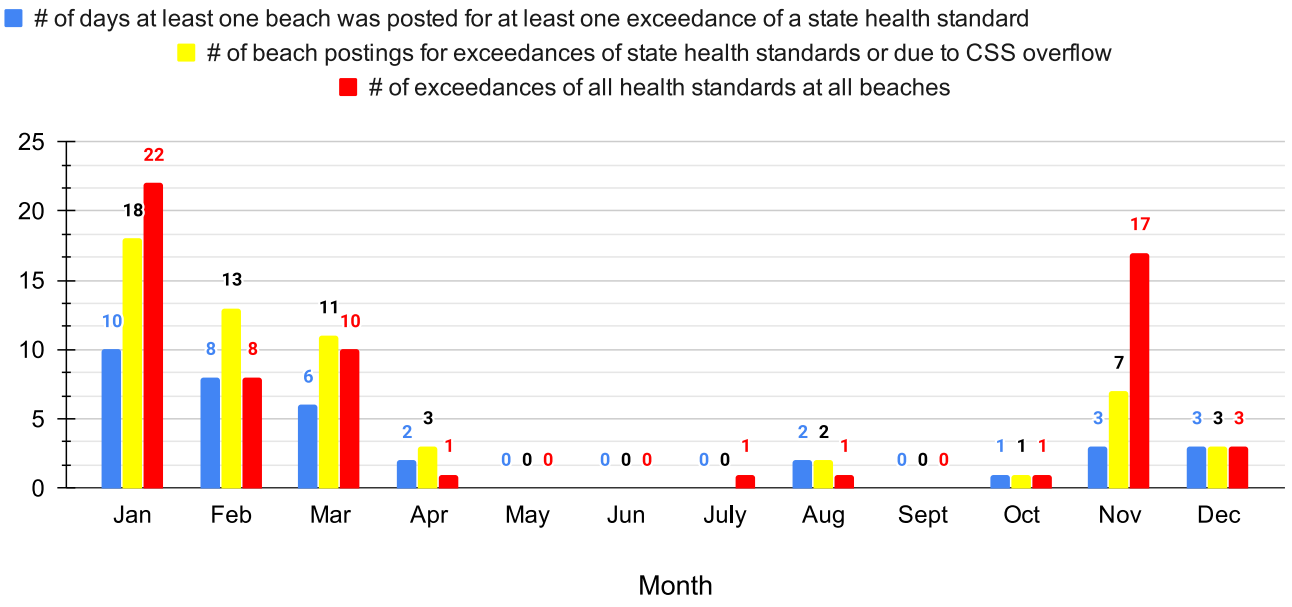

Figure 3. SF Ocean Side Beaches. 2018: Exceedance of state health standards for total coliform, e. coli, or enterococcus

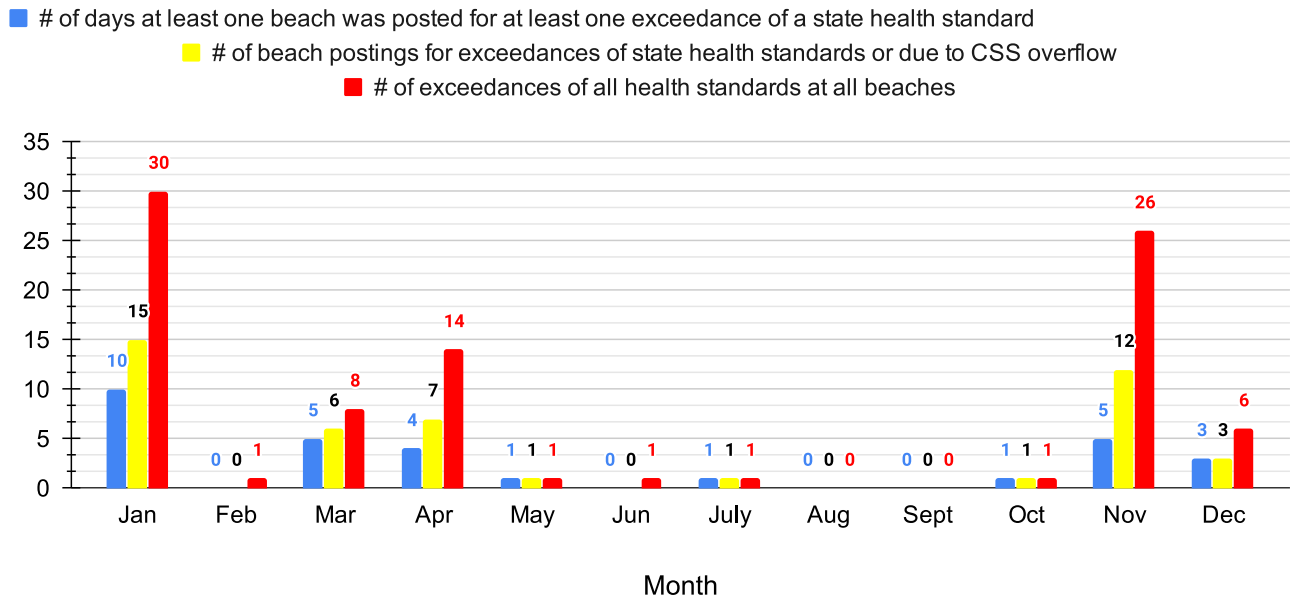

Figure 4. SF Ocean Side Beaches. 2019: Exceedance of state health standards for total coliform, e. coli, or enterococcus

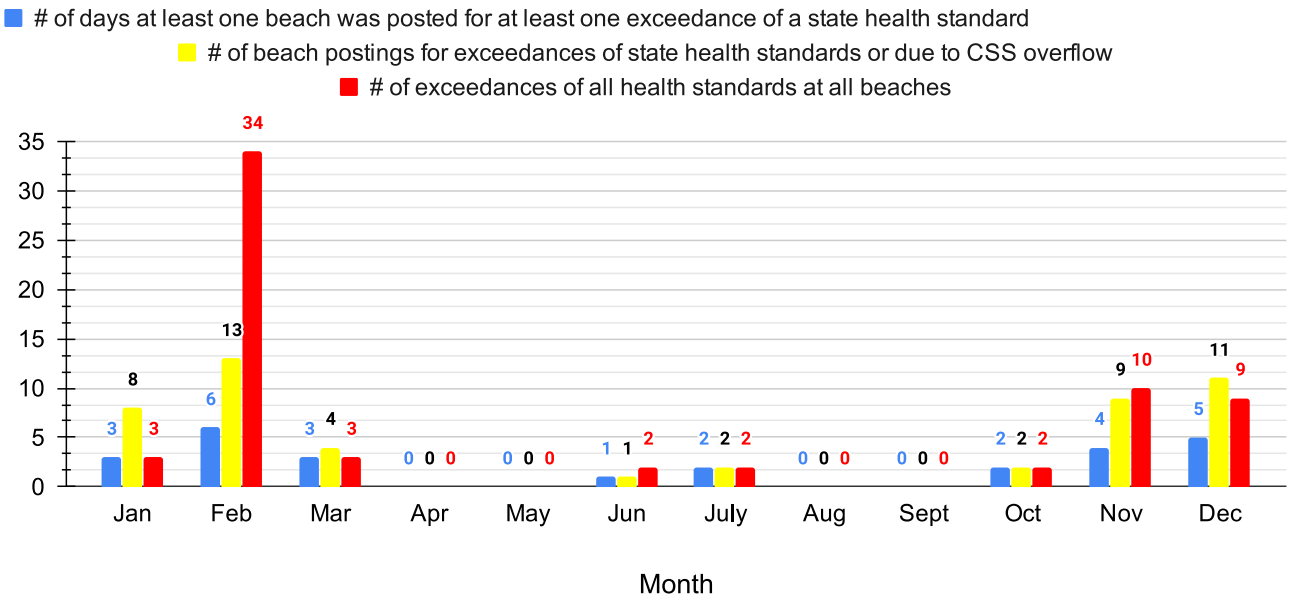

Figure 5. SF Ocean Side Beaches. 2020: Exceedance of state health standards for total coliform, e. coli, or enterococcus

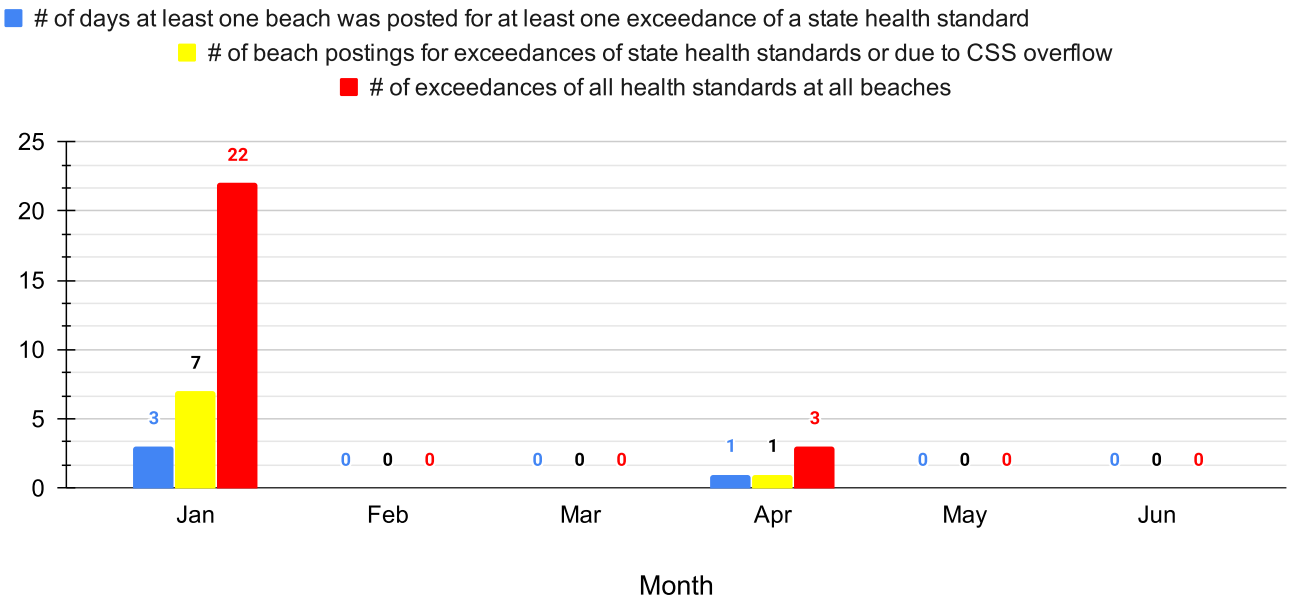

Figure 6. SF Bay Side Beaches. 2016: Exceedance of state health standards for total coliform, e. coli, or enterococcus

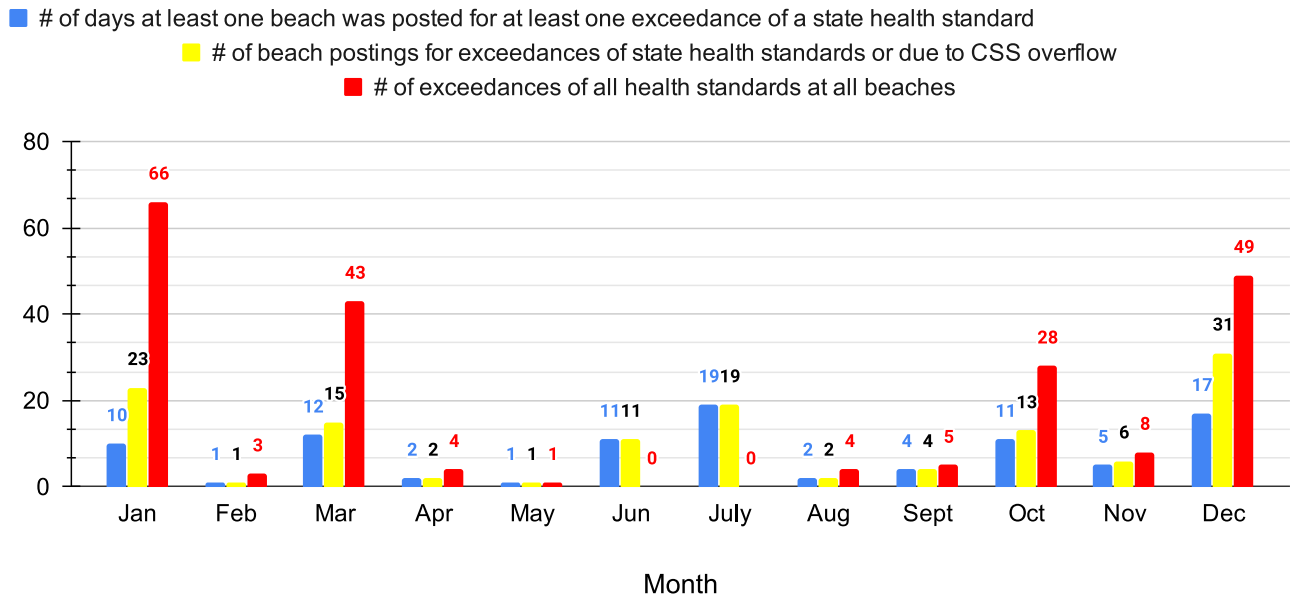

Figure 7. SF Bay Side Beaches. 2017: Exceedance of state health standards for total coliform, e. coli, or enterococcus

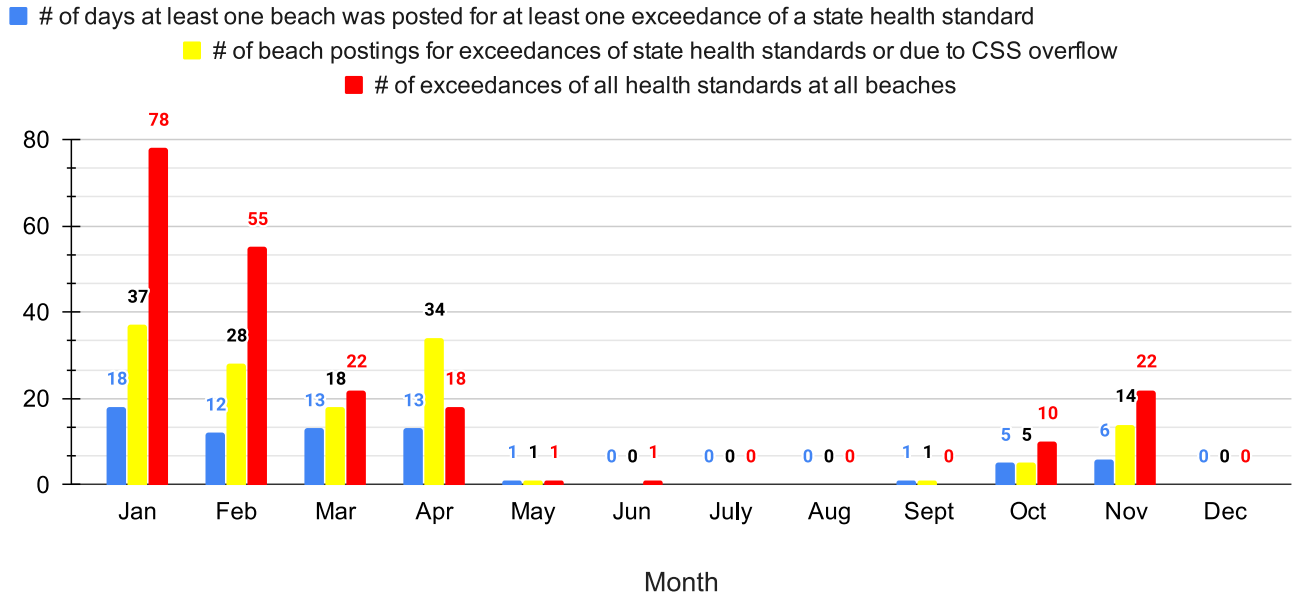

Figure 8. SF Bay Side Beaches. 2018: Exceedance of state health standards for total coliform, e. coli, or enterococcus

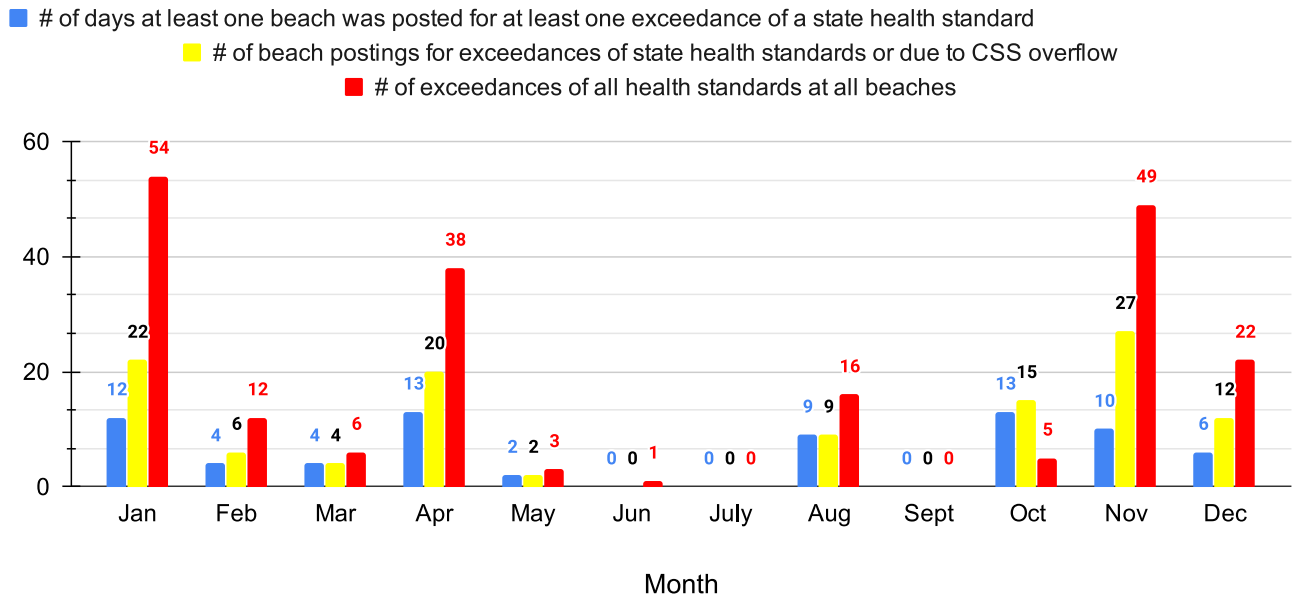

Figure 9. SF Bay Side Beaches. 2019: Exceedance of state health standards for total coliform, e. coli, or enterococcus

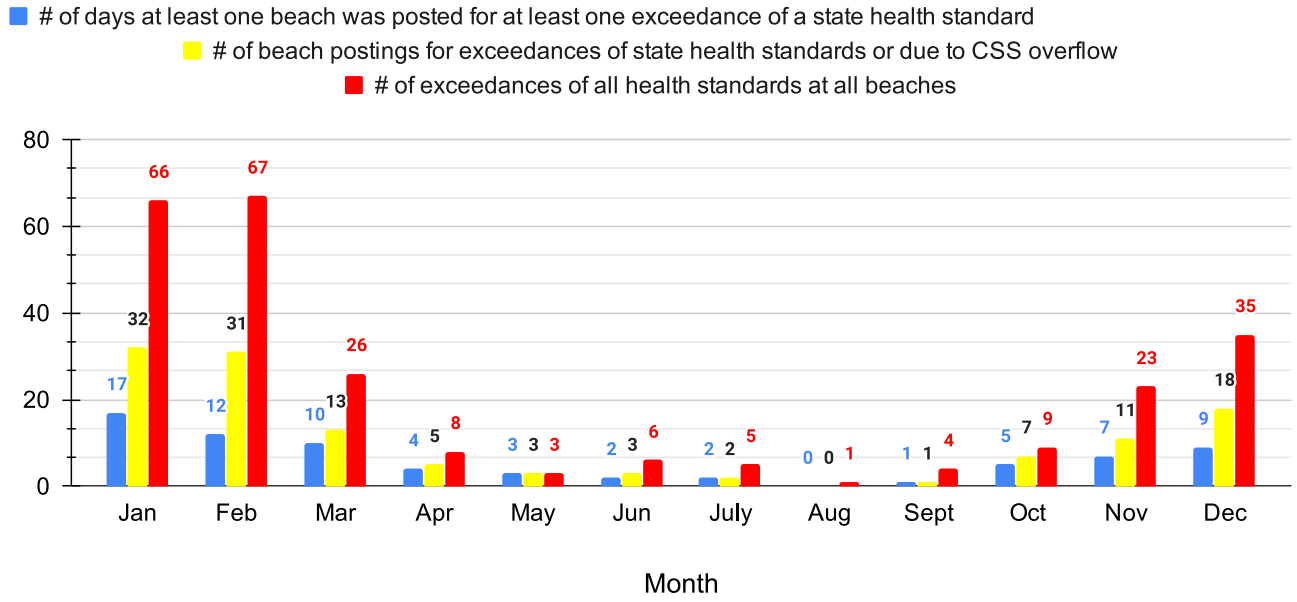

Figure 10. SF Bay Side Beaches. 2020: Exceedance of state health standards for total coliform, e. coli, or enterococcus

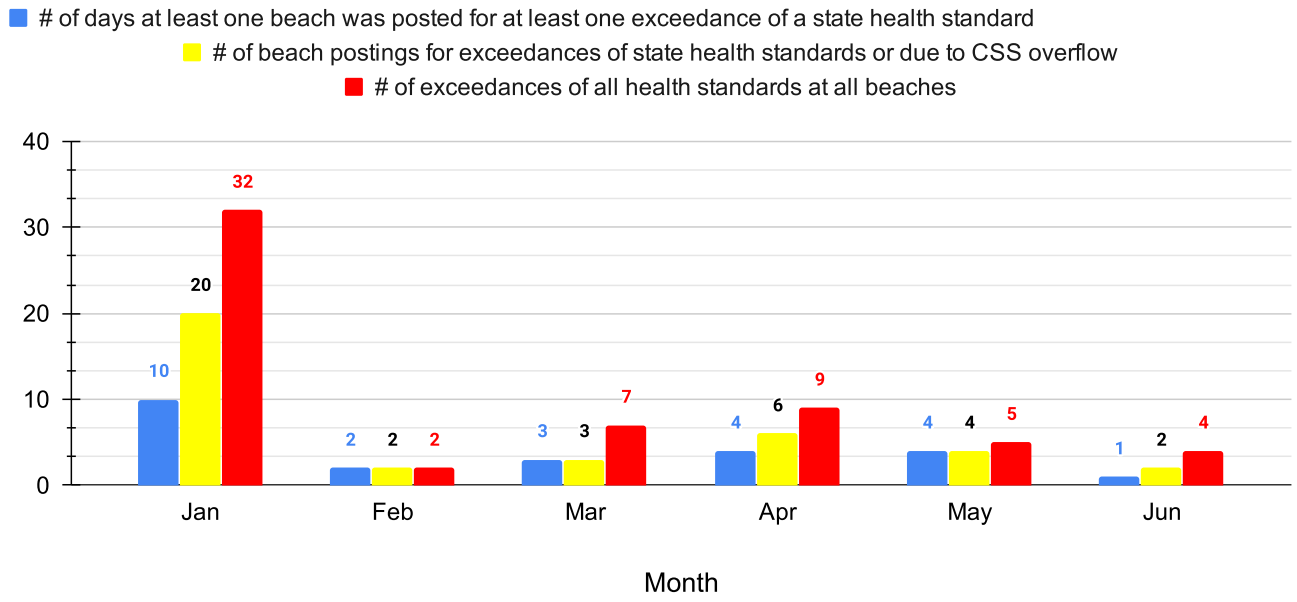

Figure 11. SF All Beaches. 2016: Exceedance of state health standards for total coliform, e. coli, or enterococcus

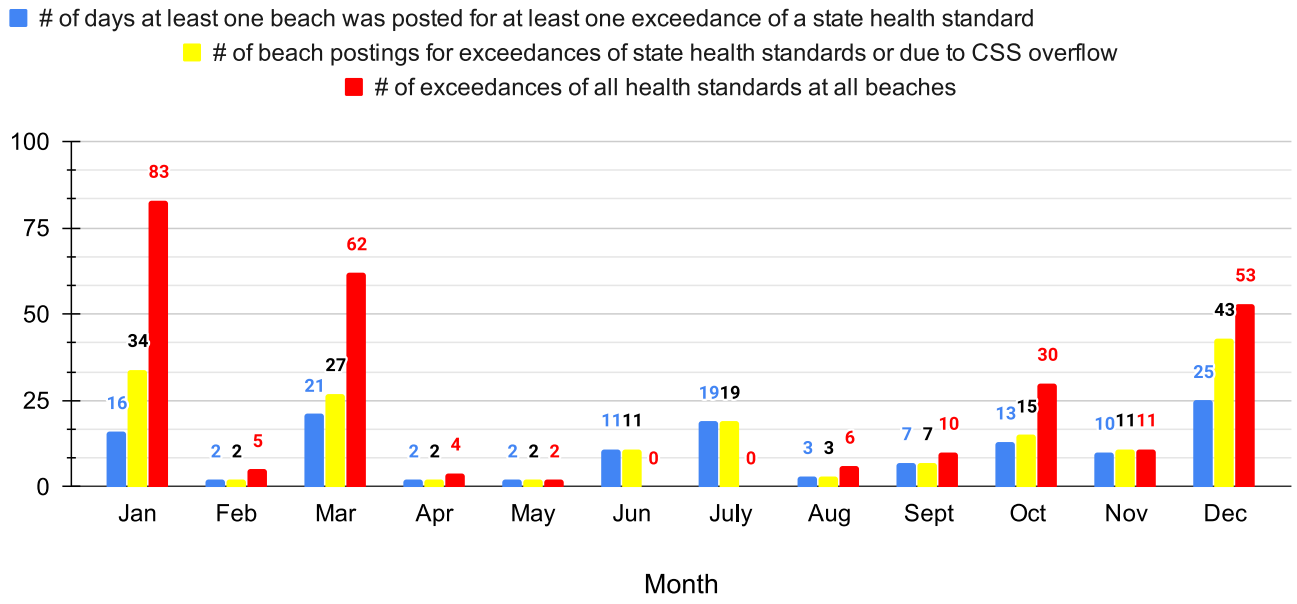

Figure 12. SF All Beaches. 2017: Exceedance of state health standards for total coliform, e. coli, or enterococcus

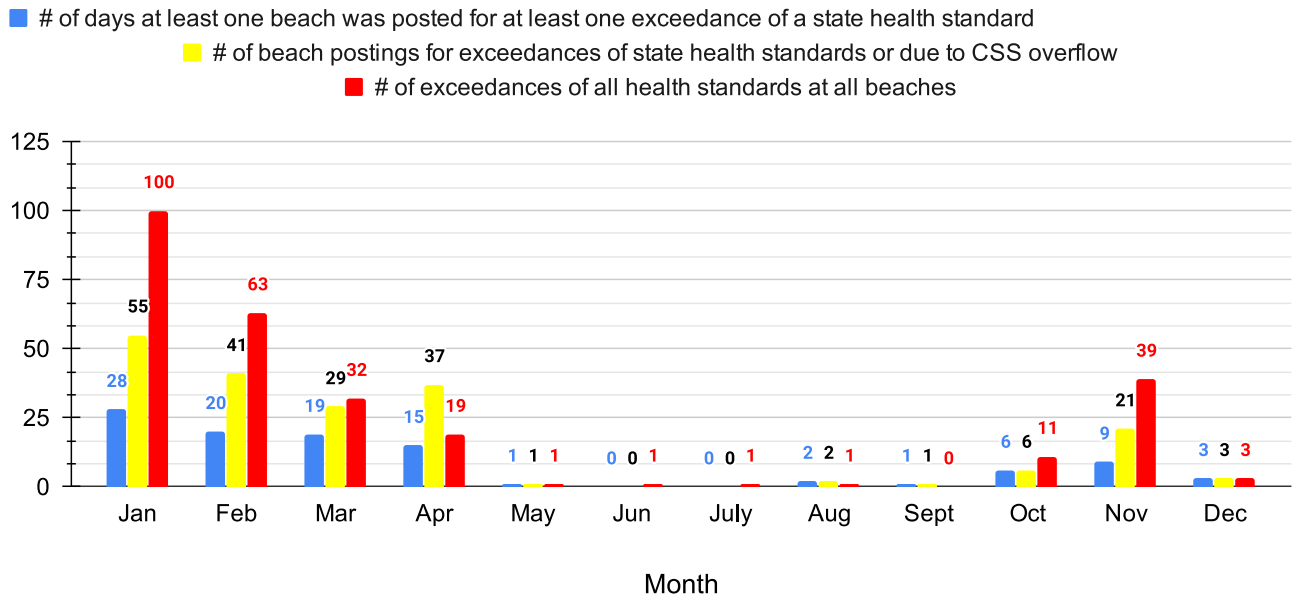

Figure 13. SF All Beaches. 2018: Exceedance of state health standards for total coliform, e. coli, or enterococcus

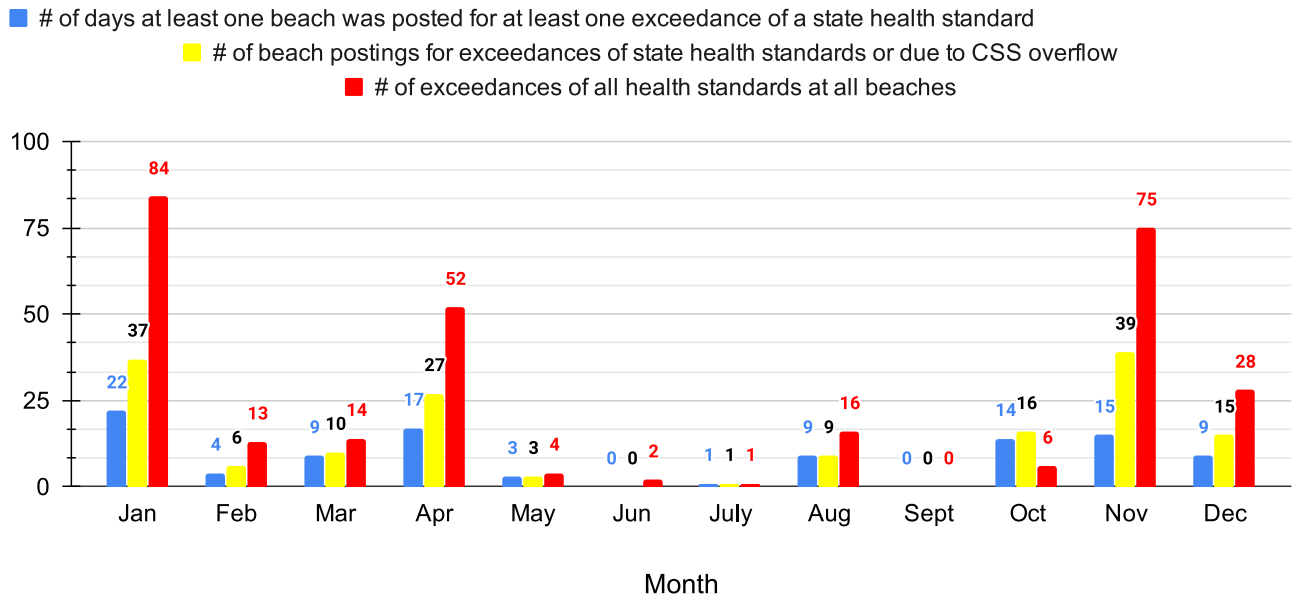

Figure 14. SF All Beaches. 2019: Exceedance of state health standards for total coliform, e. coli, or enterococcus

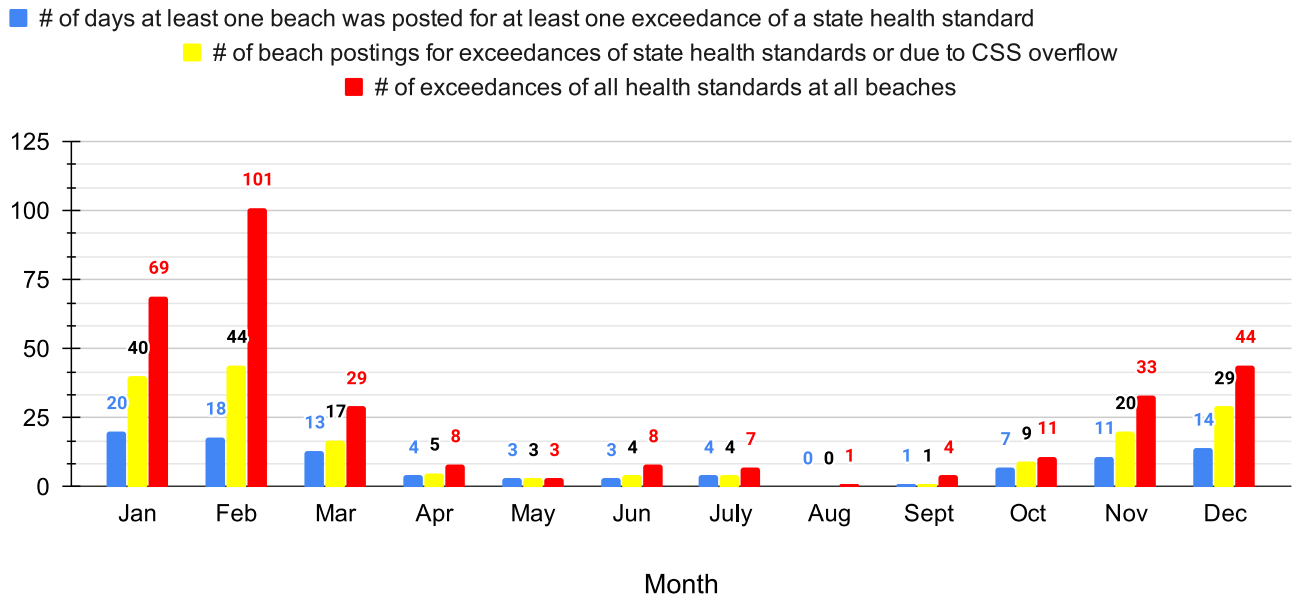

Figure 15. SF All Beaches. 2020: Exceedance of state health standards for total coliform, e. coli, or enterococcus

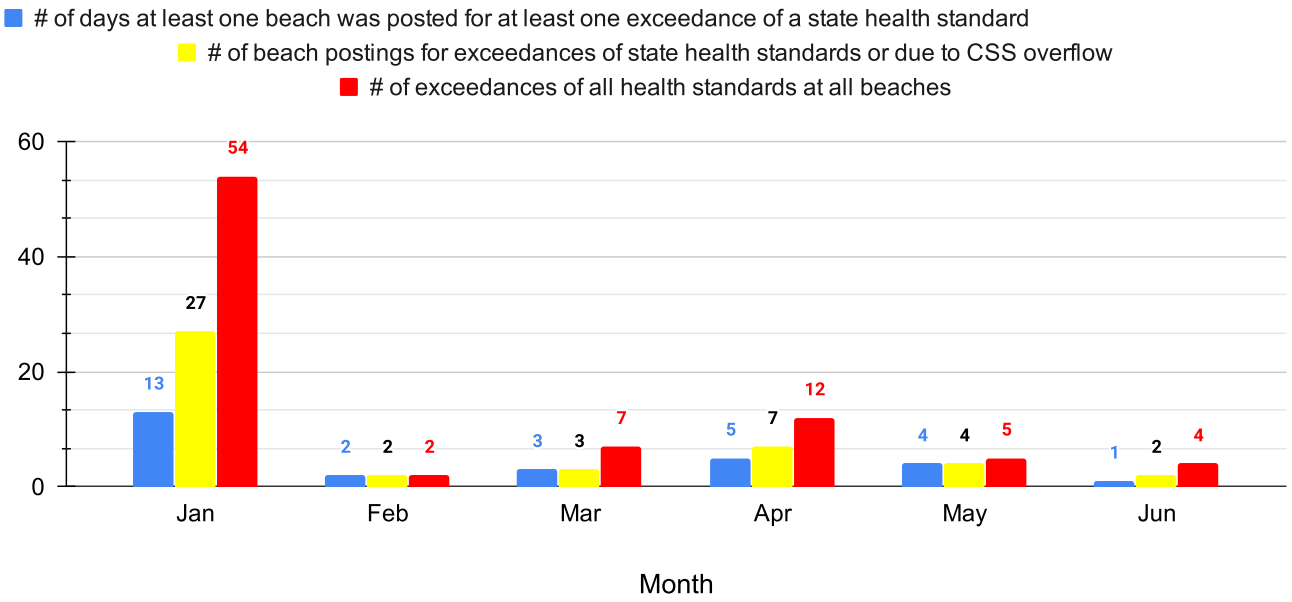

EXHIBIT 1

REED CORPORATION

2140 Shattuck Avenue, Suite 209
Berkeley, CA 94704
(510) 549-2427
Fax (510)-232-3796

September 10, 2020

Law Offices of Thomas N. Lippe APC
201 Mission St., 12th Floor
San Francisco, CA 94105

ATTN: Tom Lippe, Esquire

Subject: Draft Comment on the UCSF-CPHP-Draft-EIR

Dear Mr. Lippe:

My name is Dr. Larry L. Russell, P.E.,T3 and my C.V. is attached as Appendix A. As with many environmental issues, the impacts of a development of over 2,000,000 square feet of new buildings are many fold. The potential impacts on the environmental compliance under the City of San Francisco Oceanside sewage treatment plant of adding this level of discharge are relatively straightforward. While the average dry weather flow of the treatment facility is reported to be 17 million gallons per day (MGD) and the design capacity is reported to be 43 MGD, the issue as shown by the water quality monitoring done by the City shows that there have been numerous violations of the National Pollution Discharge System (NPDES) expired permit, especially during the winter quarters. These violations have been noted and reported to the City by the Environmental Protection Agency (EPA) and are the subject of future (and present) enforcement actions (November 21, 2019, Notice of Violation October 2, 2019).

The EPA sternly reminded the City that the EPA CSO policy does not relieve them of their responsibility to meet all applicable Water Quality Standards (WQS) during CSO events. The EPA reminded the City that its CSO discharges occur in sensitive areas at Ocean Beach, China Beach and Baker Beach. The EPA also reminded the City that while in 1994 they were ahead of the CSO compliance curve, after 25 years, the City is well behind the nationwide compliance curve standards for CSO's. The EPA also made it painfully clear that the City is not even close to meeting the required 85 percent treatment levels required today for allowing CSO discharge, nor are the Beach WQS being met during events that were predicted to occur four to six times per year, but actually occur over 20 times per year releasing over 1.5 billion gallons of raw to partially treated but un-disinfected sewage into the beach receiving waters.

The NOV reported the following violations (edited for brevity) as follows:

1. Failure to properly operate and maintain its facilities including the associated collection systems...

2. Failure to comply with wet weather operational requirements to maximize use of the collection system for storage and to maximize flows to treatment plants...

3. Failure to post warning signs when public contact with wastewater could reasonably occur...

4. Failure to comply with reporting and record keeping requirements related to releases or diversions of untreated or partially-treated sewage from the combined sewer system...

5. Failure to comply with CSD [combined sewage discharge] monitoring and reporting...

6. Failure to notify the public of CSDs...

7. Failure to comply with water quality standards...

These Combined Sewer Overflows (CSO) discharges result from the impact of over loaded and aged sewage collection system that results in CSO's during wet weather which results in high wastewater flows. The problem with CSO's are many fold. First, a CSO occurs whenever the collection system and/or the treatment plant is (are) overwhelmed by the quantity of sewage that is moving through that section of pipe or the treatment plant. Second, a CSO results in the discharge of untreated sewage and all of its constituents without treatment or disinfection. These CSO discharges enter the watershed and henceforth into the Ocean and onto the City's beaches and other areas, which are used for recreation.

While there is a Total Maximum Daily Load (TMDL) for coliform bacteria in the Bay (which the City is also violating at the Southeast Plant), the Oceanside plant's NPDES permit in reality can be conceived as acting in a manner similar to a San Francisco Bay TMDL for bacteria (the Bay TMDL could also apply if UCSF (or the City) decide to route their wastewater to the Southeast Wastewater treatment plant which is also troubled with CSO issues). When a CSO occurs, the NPDES permit is violated when the Beaches receive the un-disinfected wastewater containing excessive coliform levels that are above the California Ocean Plan standards (summarized in Appendix B), resulting in a potentially significant impact on human and aquatic health.

How does all of this impact UCSF expansion plans? As noted previously, the UCSF EIR calls for the discharge of an additional 180,000 gpd (likely an underestimate) into a frequently overloaded sewage system. Under the TMDL concept and enforcement process, it is illegal to discharge any contaminants regulated by the TMDL into an already impaired water body (under section 503), which is exactly what the City is doing when the CSO's occur and cause the receiving water to violate the State's WQS. Therefore, adding more sewage to this already over taxed collection and treatment system during wet weather events, simply makes the situation worse. The intent of the EPA NOV letter is clear. It is clear that enforcement action (which could include hook up moratoriums) is coming in the very near future. It is possible that the enforcement action may include a prohibition on additional sewer hook ups until the CSO issue is addressed, by incorporation of the concept of the City's Article 12 C.

Therefore, due to the obvious impact of the coming enforcement action, the proposed project should not proceed without significant wastewater/storm water mitigation controls. The basic mitigation that should occur would begin with voluntary compliance with the City's Article 12 C, which requires all large developments over 250,000 square feet to incorporate grey (and or black) water treatment systems and recycle into their design. In addition to providing recycled water for toilet flush, Article 12 C incorporates design improvements to provide 24 hour storm and grey water on-site storage to allow for the delayed discharge of the development's grey water into the City's combined sewage collection system. It should also be noted that the UCSF EIR includes the replacement of the on-site 180,000 gallon water storage tanks, without comment on their cost or any anticipated difficulties with re-

constructing essentially the same size tanks that would be required to store the grey/black wastewater from the facility.

An additional consideration that should be taken into account regarding CSO discharges is that they occur in the surf zone on the recreational beaches of the western side of San Francisco. Thus, during a CSO, the low density (low salinity) untreated sewage is discharged at the ocean's surface where it floats. Therefore, the un-disinfected untreated wastewater floats onto the beaches and is slowly mixed into the water column by wave action rather than having the treated and disinfected wastewater being discharged via an outfall diluted with diffusers which result in substantial dilution into the water column offshore.

The proposed UCSF project increases impervious surface area from 21.5 to at least 22.5 acres. This increase should be considered to be "cumulatively considerable". The critical issue is that UCSF is still thinking of storm water as a "waste" that should be removed from the property, as soon as possible, instead of thinking of stormwater, as a resource. The 22.5 acres of impervious land based on normal SF rainfall (21 inches) results in the potential to allow for easily collecting and reusing approximately 13 million gallons (per year) of very fresh water that only requires storage and minimal treatment to be easily recycled as toilet flush water (this supply would eliminate the need for approximately 20 percent of their estimated fresh water needs). Combined with grey water recycling, UCSF could likely reduce their fresh water demand by more than 50 percent (and perhaps more than 90 percent depending upon how seriously UCSF approach the incorporation of state of the art grey and black water recycling).

Normally the operation of these onsite systems include onsite reuse of the treated grey water to flush toilets and urinals. If due to perceived health concerns UCSF is unwilling to install dual plumbing systems (which would be a mistake not to do in the long run as the additional construction cost of dual plumbing is minimal during initial construction), then UCSF should look to the onsite treatment of the their black and grey water and on site storage of at least 180,000 gallons and reuse in Golden Gate Park (1,000 feet down hill from the Parnassus facility and owned by the City) or pumped to the existing housing complex at the UCSF Parnassus campus to be recycled there.

Thus fresh water demand at the UCSF facility would be dramatically reduced and uncontrolled sewage discharge into the City's sewer system could be essentially eliminated at minimal additional expense to the UCSF campus. The generated wastewater and storm water management resulting from this expansion project on the City's potential for increasing the potential for increasing the magnitude and frequency of violations of the City waste discharge requirements is significant, and these impacts require mitigation. At the very minimum UCSF should agree to be bound by the conditions of the City's Article 12C which requires gray and storm water collection, retention, and recycling for buildings larger than 250,000 square feet in size.

Regards,

Larry L. Russell, Ph.D., P.D., G3
President

Appendix A

LARRY L. RUSSELL, Ph.D., P.E.

EDUCATION Ph.D., Enviornmental Engineering, University of California at Berkeley
Minors in Chemistry/Chemical Engineering
Ground Water Hydrology
M.S., Sanitary Engineering, University of California at Berkeley
B.S., Civil Engineering, University of California at Berkeley

REGISTRATION

Civil Engineer in California
Chemical Engineer in California
Corrosion Engineer in California
Professional Engineer in Arizona
Professional Engineer in Georgia
Professional Engineer in Hawaii
Professional Engineer in Kansas
Professional Engineer in Kentucky
Professional Engineer in Michigan
Professional Engineer in Nevada
Professional Engineer in New Mexico
Professional Engineer in New York
Professional Engineer in Oregon
Professional Engineer in South Carolina
Professional Engineer in Texas
Professional Engineer in Washington
Board Certified Civil Engineer, American Academy of Environmental Engineers
A Engineering Contractor - 702818 California, Builder B, C-55, C-36,C-10, HAZ, ABS
Elected Board Director of Marin Municipal Water District since 2004

PATENTS

U.S. Patent No. 5,336,398 Water Treatment Device
U.S. Patent No. 5,975,628 Children's High Chair Tray
U.S. Patent No. 5,992,684 Water Dispensing Device
U.S. Patent No. 6,103,097 Method and Apparatus for Lead Corrosion Control
U.S. Patent No. 6,423,208 Method and Apparatus for Lead Contamination trol
U.S. Patent No. 6,773,607 Ballast Water Treatment for Exotic Species Control
U.S. Patent No. 6,823,332 Information Storage and Retrieval Device

Dr. Larry L. Russell (continued)

U.S. Patent No. 7,149,469 Method and System for Receiving Audio Broadcast

U.S. Patent No. 7,194,459 Information Storage and Retrieval Device
U.S. Patent No. 7,186,327 Method and Apparatus for Scaling Control and In-Situ Cathodic Protection

AREAS OF EXPERTISE

Applied environmental chemistry and engineering as related to concerns in air, water, soil with special emphasis on water conservation in the food processing industry. Dr. Russell has a strong process background in the area of water management for industry and for the implementation of wastewater recycling in the food processing industry. He has designed over 100 water conservation systems for water systems for municipal and industrial facilities.

Following a nationwide search by the U.S. EPA, Dr. Russell's team was selected to develop the **EPA Process Control Manual for Aerobic Biological Wastewater Treatment Facilities**. The preparation of this report was based on a hands-on survey of the best operated wastewater treatment plants located in each Region of the EPA. as determined by that Region. Following site visits to over 30 treatment plants, Dr. Russell analyzed the data to prepare a comprehensive analysis of what operational and design criteria work well at these best plants. The report was distributed by EPA to every treatment plant in the United States.

The next task in Dr. Russell's career was also the result of a nationwide search for the best team to prepare an evaluation for the Office of Water Research in the U.S. Department of the Interior (DOI) on the subject of **Water Recycling in the Food Processing Industry.** Dr. Russell's team was selected due to their extensive experience with water conservation and recycling in the food processing industry, due in part to his location in the middle of California's food industry with its $6 billion annual turnover. The report addressed all of the food processing facilities in the United States, as identified by the Department of Interior. An evaluation of the water use efficiency of the food processing industry in terms of water usage per ton of product was conducted and the most efficient techniques for minimizing water usage was identified for each segment of the U.S. food industry.

Following the preparation of the water recycling report for the U.S. DOI, Dr. Russell's team was selected to prepare a study on **Water Recycling in California's Food Processing Industry** for the Office of Water Recycling ofthe California State Water Resources Control Board. At the suggestion of Dr. Russell, due in part to the fact that his team had just prepared the comprehensive DOI report and the economic impact of this major segment of the California food industry, the California report was focused on the fruit and vegetable industry segment. The report focused on the members of this industry segment and the potential for reducing water usage in the fruit and vegetables processing segment.

Dr. Larry L. Russell (continued)

As a result, Dr. Russell is one of the foremost experts on the implementation of water conservation and water recycling in the industry, he is also an expert on the process control of

sewage treatment processes, and his personal engineering has resulted in the saving of over 50,000,000 gallons of fresh water per year. He has consulted for more than 100 major food processing companies at over 300 food processing facilities. During his career, he has provide water conservation/wastewater management/recycling for food processing companies including Nestles, Green Giant, Pillsbury, Del Monte Foods, Carnation, C&H Sugar, Spreckels Sugar, Smuckers , Contadina Tri Valley Growers, Hilmar Cheese, Bolthouse Farms, Kernridge Growers, Anheuser Busch, the Clorox Company..

Dr. Russell has conducted forensic evaluations on a wide variety of investigations involving releases from over 100 petroleum storage facilities located though out California and the United States, heavy metal contamination from recycling and military operations, landfills leachate management/treatment, explosive leachates from munitions landfills, perchlorate management from previous explosive, photoflash and rocket manufacturing. Well water pollution/source selection, materials selection and performance, corrosion mitigation, hazardous materials management, management of acid mine ground/surface water drainage management claimed personal injury from chlorine exposure in a wastewater system, water and sanitary and storm sewer system design and the nature of contaminant contribution. These evaluations have resulted in addressing the steps required to clean up as well as assignment of costs in proportion to responsibility, determination of the initial date of contribution and determination of responsibility for the release.

PREVIOUS EXPERIENCE

President - RUSSELL ENVIRONMENTAL ENGINEERING AND DEVELOPMENT (REED) CORPORATION - a small high tech environmental consulting firm specializing in sanitary engineering design and evaluation of forensic engineering aspects of ground water cleanups.

Chairman - Aqua Resources, Inc. - Responsible for technical management of projects for industrial/hazardous waste management

Vice President - James M. Montgomery Consulting Engineers - Manager of Industrial/Hazardous Waste Services for largest environmental firm in California

ORGANIZATIONS

AMERICAN WATER WORKS ASSOCIATION
WATER ENVIRONMENT FEDERATION
NATIONAL ASSOCIATION OF CORROSION ENGINEERS

Publications

Books and Thesis

Dr. Larry L. Russell (continued)

Water Treatment - Principles and Design , 1985 .James M. Montgomery Consulting Engineers, Inc. co-author pp.696 Wiley Interscience

Chemical Aspects of Ground Water Recharge with Treated Wastewater Doctoral Thesis, November 1976, University of California at Berkeley

EPA Process Control Manual for Aerobic Biological Wastewater Treatment Facilities USEPA July 1977

Water Recycling in the Food Processing Industry Office of Water Research Department of the Interior November 1980

Water Recycling in California's Food Processing Industry Office of Water Recycling State Water Resources Control Board July 1981

IWA Best Pratice Guide for the Control of Metals in Water 2012

IWA Best Practice Guide for Small Water Plants 2014

IWA Drinking Water Minerals and Mineral Balance 2015,2019

Courses Taught

Phase Separation for Hazardous Materials - University of California Extension - Davis, CA

Chemistry of Hazardous Materials - University of California Extension - Berkeley, CA

Dr. Larry L. Russell (continued)

Technical Articles

Russell, L.L. and Thomas,J.F. "Increase of TDS by Ground Water Recharge". Water Pollution Control Federation 48th Annual Conference, Miami, October 1975

Russell, L.L., DeBoice J.N., and Carey,W.W. "Land Application of Winery Wastewater",Purdue Industrial Waste Conference, May 1976

Russell, L.L. and Thomas, J.F., "A Model For Estimating Ground Water Degradation" Hydraulics Division ASCE Specialty Conference on Modeling in Environmental Engineering, Purdue University, August 1976

Russell, L.L., DeCoite. D, Trussell, R.R., and Potter, L. "Operating the Activated Sludge Process" Water Pollution Control Federation 49th Annual Conference Minneapolis, October 1976

Trussell,R.R., Russell, L.L., Thomas, J.F., " The Langelier Index" AWWA, Water Quality in the Distribution System, December 1977

Russell, L.L., Trussell, R.R, and DeBoice,J.N. "Removal of Iron and Manganese from Drinking Water" California AWWA Meeting, San Jose, CA October 1978

Russell, L.L., Creson, C.F. , and Connaroe, K." Water Recycling in the Food Processing Industry" Purdue Industrial Waste Conference May 1980

Russell, L.L., Ramaley, B." Treatment and Disposal of Hazardous Wastes from Tank Truck Washing Facilities" Purdue Industrial Waste Conference May, 1980

Russell, L.L. "Mixing Zones in Puerto Rico" presented at the request of the University of Puerto Rico, May 1982

Russell, L.L., Cain, C. "Impact of Priority Pollutants on Wastewater Treatment Plant Operations" Purdue Industrial Waste Conference May 1984

Russell, L.L.,"Economical Design of Hazardous Waste Studies" Water Pollution Control Federation Conference, 56th Annual Meeting, New Orleans, October 1984

Russell, L.L. "Alternatives for Small Quantity Discharges of Hazardous Waste" ASCE Specialty Conference, San Francisco, April 1985

Cain, C. Kerameda, V, Russell, L.L., "Indianapolis Pretreatment Program" Water Pollution Control Federation 57th Annual Meeting Kansas City, October 1985

Russell, L. "The status of industrial discharge compliance with the U.S.E.P.A. NPDES program" by invitation to Generalitat de Catalunya Departament d'Industria i Energia, Barcolena, Spain December 10, 1987.

Dr. Larry L. Russell (continued)

Russell, L. "Industrial Water Recycling/Waste Minimization" 5th Annual Industrial Waste Conference Anaheim,CA February 10, 1988

Russell, L. "Use of Ozone in Water Treatment" presentation by invitation for the Orange County Water District Symposium on Colored Water, Costa Mesa, CA April 1988

Russell, L. "Removal of Oil and Grease f\rom Municipal Wastewater" by invitation to the California Water Pollution Control Federation - Industrial and Hazardous Waste Conference in San Jose, California on February 15, 1989.

Russell, L. , Medbery, S. "Development of the Local Pretreatment Limits for the City and County of San Francisco" For presentation at the Annual Water Pollution Control Federation meeting in San Francisco, CA October 1989.

Russell, L. "Recycled Wastewater Usage in the Food Processing Industry" by invitation to the Pennsylvania Food Processors Association, Hershey, PA November 1989
Russell, L. , Litwin, Y. "Conceptual Aspects of Remedial Investigations" Presentation at the NWWA Ground Water Action program Las Vegas, NV May 14, 1990.

Russell, L., Medbery, S. Establishing Industrial Waste Standards for the City of San Francisco presented by invitation at the Pollution Control 97 conference in Bangkok, Thailand, November 12, 1997.

Russell, L. “Evaluating the Behavior of Copper Piping Materials in Domestic Water Systems” presented by invitation of the EU COST 637 Committee in Antalya Turkey, October 2007

Dr. Larry L. Russell (continued)

Appendix B

State Ocean Plan Highlights (summarized)

B. Bacterial Characteristics

1. Water-Contact Standards

Both the State Water Board and the California Department of Public Health (CDPH) have established standards to protect water contact recreation in coastal waters from bacterial contamination.

State Water Board Water-Contact Standards(1)Within a zone bounded by the shoreline and a distance of 1,000 feet from the shoreline or the 30-foot depth contour, whichever is further from the shoreline..., ...30-day Geometric Mean The following standards are based on the geometric mean of the five most recent samples from each site:

i. Total coliform density shall not exceed 1,000 per 100 mL;
ii. Fecal coliform density shall not exceed 200 per 100 mL;
iii. Enterococcus density shall not exceed 35 per 100 mL.

Single Sample Maximum:

i. Total coliform density shall not exceed 10,000 per 100 mL;
ii. Fecal coliform density shall not exceed 400 per 100 mL;
iii. Enterococcus density shall not exceed 104 per 100 mL; and
iv. Total coliform density shall not exceed 1,000 per 100 mL when the fecal coliform/total coliform ratio exceeds 0.1.

When a public beach or public water-contact sports area fails to meet these standards, CDPH or the local public health officer may post with warning signs or otherwise restrict use of the public beach or public water-contact sports area until the standards are met.

EXHIBIT 2

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

RESOLUTION No. R2-2016-0021

Amending the Water Quality Control Plan for the San Francisco Bay Basin to Establish a Total Maximum Daily Load and Implementation Plan for Bacteria in San Francisco Bay Beaches

WHEREAS, the California Regional Water Quality Control Board, San Francisco Bay Region (Water Board), finds that:

1. The Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) is the Water Board's master water quality control planning document. It designates beneficial uses and water quality objectives for waters of the State, including surface waters and groundwater. It also includes programs of implementation to achieve water quality objectives. The Basin Plan was duly adopted by the Water Board and approved by the State Water Resources Control Board (State Water Board), State Office of Administrative Law (OAL) and the United States Environmental Protection Agency (U.S. EPA), where required.

2. The Basin Plan may be amended in accordance with Water Code section 13240, et seq. The proposed Basin Plan amendment complies with this section.

3. Aquatic Park Beach (San Francisco); Jackrabbit, Sunnydale Cove, and Windsurfer Circle beaches (Candlestick Point, San Francisco); Crissy Field Beach (San Francisco); Parkside Aquatic and Lakeshore Park beaches (Marina Lagoon, City of San Mateo); and China Camp and McNears beaches (Marin County) have been identified under federal Clean Water Act section 303(d) as impaired water bodies due to bacteria. These beaches are collectively referred to as San Francisco Bay Beaches herein.

4. Under Clean Water Act section 303(d), the Water Board is required and authorized to establish the total maximum daily load (TMDL) for those pollutants identified as causing impairment of waters on the 303(d) list. Additionally, under Water Code section 13242, the Water Board is authorized to develop an implementation program to achieve water quality objectives.

5. A Basin Plan amendment has been prepared in accordance with Water Code section 13240 that will establish the TMDL and Implementation Plan to reduce bacteria-related risks to humans and protect water contact and non-contact beneficial uses at San Francisco Bay Beaches.

6. The Basin Plan amendment includes requirements to implement wasteload allocations for urban runoff through municipal stormwater NPDES permits. The Water Board intends to establish permit requirements to attain the wasteload allocations through implementation of best management practices in lieu of numeric limits, because the wasteload allocations are not designed to be directly implemented as numeric limits.

7. The Basin Plan amendment, including specifications on its physical placement in the Basin Plan, is set forth in Exhibit A hereto.

8. The scientific basis for the regulatory elements of the proposed Basin Plan amendment was subjected to an independent, external peer review by Professor Patricia Holden and Professor Peter Strom, pursuant to the requirements of Health and Safety Code section 57004.

9. On January 15, 2016, the Water Board publicly noticed the proposed Basin Plan amendment and distributed the proposed Basin Plan amendment, supporting Staff Report, and Environmental Checklist for public review and comment in accordance with applicable State and federal environmental laws and regulations.

10. The process of basin planning has been certified by the Secretary for Resources as exempt from the requirement of the California Environmental Quality Act (CEQA) (Pub. Res. Code § 21080.5) to prepare an Environmental Impact Report or Negative Declaration.

11. The Basin Plan amendment package includes a Staff Report, an Environmental Checklist, an assessment of the potential environmental impacts of the Basin Plan amendment, and a discussion of alternatives and cumulative impacts. The Basin Plan amendment, Environmental Checklist, Staff Report, and supporting documentation serve as a substitute environmental document under the Water Board's certified regulatory program.

12. The Water Board has duly considered the Environmental Checklist, Staff Report, and supporting documentation with respect to environmental impacts and finds that the proposed Basin Plan amendment will not have a significant impact on the environment. The Water Board further finds, based on consideration of the record as a whole, that there is no potential for significant adverse effect, either individually or cumulatively, on wildlife as a result of the proposed Basin Plan Amendment.

13. The Water Board has also considered the environmental analysis in the Staff Report and the Environmental Checklist of the reasonably foreseeable methods of compliance with the Basin Plan amendment, including economic impacts.

14. The Water Board has carefully considered all comments and testimony received, including responses thereto, on the Basin Plan amendment, as well as all of the evidence in the administrative record.

15. The Basin Plan amendment must be submitted for review and approval by the State Water Board, OAL, and U.S. EPA. Once approved by the State Water Board, the amendment is submitted to OAL and U.S. EPA. The Basin Plan amendment will become effective upon approval by OAL and U.S. EPA.

NOW, THEREFORE BE IT RESOLVED THAT:

1. The Water Board adopts the Basin Plan amendment as set forth in Exhibit A hereto.
2. The Executive Officer is directed to forward copies of the Basin Plan amendment to the State Water Board in accordance with the requirements of Water Code section 13245.

3. The Water Board requests that the State Water Board approve the Basin Plan amendment in accordance with the requirements of Water Code sections 13245 and 13246 and forward it to OAL and U.S.EPA for approval.
4. If, during the approval process, Water Board staff, the State Water Board, or OAL determines that minor, non-substantive corrections to the language of the amendment are needed for clarity or consistency, the Executive Officer may make such changes and shall inform the Water Board of any such changes.
5. Because the Basin Plan amendment will involve no potential for significant adverse effect, either individually or cumulatively, on wildlife, the Executive Officer is directed to sign a CEQA Filing Fee No Effect Determination Form and to submit the exemption in lieu of payment of the California Department of Fish and Wildlife CEQA filing fee.

I, Bruce H. Wolfe, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of a Resolution adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on April 13, 2016.

Digitally signed by Bruce H. Wolfe
DN: cn=Bruce H. Wolfe, o=SWRCB, ou=Region 2, email=bwolfe@waterboards.ca.gov, c=US
Date: 2016.04.14 13:25:34 -07'00'

BRUCE H. WOLFE
Executive Officer

Attachment:

Exhibit A – Basin Plan Amendment to Establish a Total Maximum Daily Load and Implementation Plan for Bacteria in San Francisco Bay Beaches

EXHIBIT 3

Basin Plan Amendment to Establish a Total Maximum Daily Load and Implementation Plans for Bacteria at San Francisco Bay Beaches

The following text is to be inserted into Chapter 7.2.

7.2.5 San Francisco Bay Beaches Bacteria TMDL

The following sections establish the TMDL for San Francisco Bay beaches impaired by bacteria. The numeric targets, load and waste load allocations, and implementation plan are designed to support and protect the Bay's designated beneficial use of water contact recreation (e.g., swimming and wading).

7.2.5.1 Problem Statement

The waters adjacent to several San Francisco Bay beaches are impaired by indicator bacteria. Bacteriological water quality objectives are exceeded based on elevated indicator bacteria densities, and thus, there is impairment of the water contact recreation (REC-1) beneficial use in these water bodies. Recreating in waters with elevated indicator bacteria densities has long been associated with adverse health effects. Specifically, national epidemiological studies demonstrate a causal relationship between adverse health effects and recreational water quality, as measured by indicator bacteria densities.

This TMDL addresses bacteria impaired beaches in San Francisco Bay east of the Golden Gate Bridge. The impaired beaches include:

- Aquatic Park Beach, San Francisco
- Jackrabbit, Sunnydale Cove, and Windsurfer beaches in Candlestick Point State Recreation Area, San Francisco
- Crissy Field Beach, San Francisco
- Parkside Aquatic and Lakeshore beaches on Marina Lagoon, City of San Mateo
- China Camp Beach, Marin County
- McNears Beach, Marin County

China Camp Beach and McNears Beach are on the list of impaired water bodies because levels of only one bacterial indicator in waters at these beaches, total coliform, exceeds the Basin Plan's water quality objective. Waters at the other beaches exceed the bacterial indicator for Enterococcus and other bacterial indicators.

7.2.5.2 Sources

Bacteria sources are identified based on documentation of inadequately-treated human waste discharges, such as sanitary sewer overflow reports, and the scientific evidence linking land uses in the vicinity of the beaches to elevated bacteria concentrations in urban runoff to the beaches. If not properly managed, the following source categories have the potential to discharge bacteria to San Francisco Bay beaches at levels that cause or contribute to exceedances of water quality objectives: sanitary sewer collection systems, urban runoff, pets at the beaches, vessels, and wildlife. Wet weather discharges from the City of San Francisco's combined sewer system that

are authorized pursuant to U.S. EPA's Combined Sewer Overflow (CSO) Control Policy (see Section 4.9 Wet Weather Overflows) are not considered a significant source of bacteria to these San Francisco beaches.

7.2.5.3 Numeric Targets

This TMDL establishes a desired, or target, condition for water contact recreation use at impaired San Francisco Bay beaches. The numeric targets are the Enterococcus water quality objectives established for water contact recreation uses in marine and estuarine waters (Table 3-1) and on the U.S. EPA's 2012 recommended Enterococcus criteria for water contract recreation in marine and fresh water. The numeric targets for this TMDL are listed in Table 7.2.5-1.

Table 7.2.5-1 Numeric Targets for San Francisco Bay Beaches

Enterococcus	
Geometric mean	< 35 MPN / 100 mL
Single sample maximum	No sample > 104 MPN / 100 mL

7.2.5.4 Total Maximum Daily Loads

The TMDL for San Francisco Bay beaches is equivalent to the Basin Plan's water quality objectives and the numeric target for Enterococcus as shown in Table 7.2.5-1.

7.2.5.5 Load and Waste Load Allocations

Density-based pollutant allocations for bacteria source categories are the same as the numeric targets and the TMDL listed above. Table 7.2.5-2 summarizes the load and wasteload allocations for discharges of bacteria to impaired San Francisco Bay beaches.

Discharges of raw or inadequately-treated human waste are prohibited, and thus sanitary sewer collection systems and vessels have an allocation of zero.

All entities that discharge indicator bacteria or have jurisdiction over such discharges are responsible for meeting these allocations. Discharging entities will not be held responsible for uncontrollable discharges originating from wildlife. If non-nuisance wildlife contributions are found to be the cause of exceedances, the TMDL targets and allocation scheme will be revisited as part of adaptive implementation. Implementing parties shall demonstrate achievement of allocations in the receiving water bodies (i.e., at the beach shoreline water quality monitoring stations).

All implementing parties are required to attain their respective allocations by taking a phased approach in which additional or enhanced actions are required if initial implementation actions do not result in attainment of the TMDL within approximately five years.

Table 7.2.5-2 Load and Wasteload Allocations for San Francisco Bay Beaches		
Pollutant Source Category	**Enterococcus Geometric Mean[a] (MPN/100 mL)**	**Enterococcus Single Sample Maximum (MPN/100mL)**
Sanitary Sewer Collection Systems[b]	0	0
Urban Runoff[c]	< 35	No sample > 104
Vessels (Anchor-outs, recreational, houseboats)	0	0
Wildlife[d]	< 35	No sample > 104

a. Based on a minimum of five consecutive samples equally spaced over a 30-day period.
b. For the City of San Francisco, the wasteload allocation applies only to the collection system portion of the combined sewer system.
c. Wasteload allocation for discharges from municipal separate storm sewer systems (NPDES No. CAS612008, CAS000004 and CAS000003).
d. With the exception of nuisance wildlife, such as geese, wildlife is not a controllable source of bacteria. No management measures will be required for uncontrollable wildlife sources.

7.2.5.6 Implementation Plan

This Implementation Plan builds on management measures required by existing local, regional, and statewide regulations and orders to reduce or eliminate waste discharges from sanitary sewer collection systems, urban runoff, pets at beaches, and vessels. The plan requires actions consistent with existing regulations and orders, including the following:

- Water Board Municipal Regional Stormwater Permit (NPDES No. CAS612008)
- State Water Board NPDES Permit for Small Municipal Separate Storm Sewer Systems (MS4) (NPDES No. CAS000004)
- State Water Board Statewide General Waste Discharge Requirements for Sanitary Sewer Systems (Order No. 2006-0003-DWQ as revised by Order No. 2008-0002-EXEC)
- State Water Board Stormwater Permit for California Department of Transportation (NPDES No. CAS000003)
- Basin Plan Discharge Prohibition No. 15 (Table 4.1), which states: "It shall be prohibited to discharge raw sewage or any waste failing to meet waste discharge requirements to any waters of the Basin."
- Regional Water Board Cease and Desist Order for the City of San Mateo, Town of Hillsborough, and Crystal Springs County Sanitation District Sanitary Sewer Waste Discharges (Order No. R2-2009-0020)
- Regional Water Board NPDES Permit for the City and County of San Francisco Southeast Water Pollution Control Plant, North Point Wet Weather Facility, Bayside Wet Weather Facilities, and Wastewater Collection System (Order No. R2-2013-0029).

The entities responsible for implementing this plan are stated below, as are the regulatory mechanisms by which the Water Board may require that the actions be taken.

Sanitary Sewer Collection Systems

Wasteload allocations for sanitary sewer collection systems will be implemented through the requirements and provisions of the Statewide General Waste Discharge Requirements for Sanitary Sewer Systems and, for Marina Lagoon beaches, Cease and Desist Order No. R2-2009-0020 issued by the Water Board to the City of San Mateo. In the case that further investigation or reduction of pathogen sources related to sanitary sewer collection systems is needed, such actions will be initiated through the Water Board's authorities under the California Water Code.

This TMDL requires no modifications to NPDES permitting of wet weather discharges from the City of San Francisco's combined sewer system, authorized pursuant to U.S. EPA's CSO Control Policy, as they are unnecessary to achieve the TMDL. The wasteload allocation in Table 7.2.5-2 only applies to the collection system portion of San Francisco's combined sewer system.

Urban Runoff

Wasteload allocations for urban runoff (i.e., municipal stormwater runoff and dry weather flows) shall be implemented through the Municipal Regional Stormwater Permit (NPDES No. CAS612008) and the State Water Board NPDES Permit for Small MS4s (NPDES No. CAS000004).

Urban runoff from the California Department of Transportation's (Caltrans') highways has not been found to be a significant source of indicator bacteria, largely because Caltrans' highways comprise a very small area within San Francisco Bay beach watersheds. If during the course of adaptive implementation, Caltrans' facilities are found to be sources of bacteria to San Francisco Bay beaches, wasteload allocations for such discharges will be implemented through the requirements of the State Water Board Stormwater Permit for Caltrans (NPDES No. CAS000003).

Municipal stormwater entities, including national, State, or regional park systems (hereinafter referred to as park authorities), that discharge stormwater to impaired beaches are required to submit a plan to the Water Board that describes current best management practices (BMPs), their current level of implementation, and additional BMPs and/or increased levels of implementation of existing BMPs to reduce discharges of bacteria from their storm drain systems that cause or contribute to exceedance of wasteload allocations. The plan shall include a schedule for implementation of the BMPs and enhanced BMPs.

Municipal stormwater entities and/or park authorities, as applicable, shall implement pet waste control measures to reduce discharges of bacteria at the beach and shall submit a plan to do so to the Water Board, as described above.

The Water Board will establish permit requirements to implement wasteload allocations based on implementation of BMPs. The Water Board will not include numeric limits in NPDES permits if the discharger demonstrates full implementation of technically feasible, effective, and cost efficient BMPs to control all controllable sources to, and discharges from, their storm drain systems.

Vessels

Vessels ranging in size from self-propelled row boats and kayaks to yachts operate in waters adjacent to beaches addressed by this TMDL. In addition to the Basin Plan prohibition on discharge of raw sewage, the California Health and Safety Code (§117475-117500) prohibits

dumping any garbage into navigable waters of the state. Where vessels present a source of bacteria to an impaired beach, the entity with authority over vessels, such as a municipality or park authority or marina owner, shall be responsible for implementing measures to control this bacteria source.

Wildlife

Municipal stormwater entities and park authorities are responsible for control measures for nuisance wildlife, such as resident goose populations. Discharging entities will not be held responsible for uncontrollable discharges originating from wildlife.

Implementation Plan elements that are common to all or most impaired San Francisco Bay beaches are described on Table 7.2.5-3. Tables 7.2.5-4 through 7.2.5-7 list the implementation actions and schedules for the individual impaired beaches identified in 7.2.5.1, Problem Statement. The implementation schedules allow time for the implementing parties to identify and implement measures that are necessary to control bacteria discharges causing impairment.

Table 7.2.5-3 Implementation Plan Elements

Source	Action	Implementing Party	Completion Timeframe
Sanitary Sewer Collection Systems	1. Comply with Statewide General Waste Discharge Requirements for Sanitary Sewer Systems.	Sanitary sewer collection system authority	Ongoing
	2. Submit an enhanced Sewer System Management Plan that prioritizes sewer system inspections and repairs in areas within ¼ mile of the beach or otherwise connected to the beach. Include a diagram of prioritized infrastructure, a time schedule for implementing short- and long-term plans, and, as necessary, a schedule for developing the funds needed for the capital improvement plan. Complete inspections and repairs.	Sanitary sewer collection system authority	6 months 3 years
	3. Determine effectiveness of sewer system repairs: Assess beach monitoring data to determine if targets are met at the beach.	Sanitary sewer collection system authority	5 years
	After five years, begin enhanced implementation if targets not met		
	4. If targets are not met, submit an enhanced Sewer System Management Plan that prioritizes sewer system inspections and repairs in areas within ½ mile of the beach or otherwise connected to the beach. Include a diagram of prioritized infrastructure, a time schedule for implementing short- and long-term plans, and, as necessary, a schedule for developing the funds needed for the capital improvement plan. Complete inspections and repairs.	Sanitary sewer collection system authority	5.5 years 8 years
	5. If private laterals are a likely source of bacteria to the beach, establish and implement a private lateral replacement program.	Sanitary sewer collection system authority, and Municipalities	5 years

Table 7.2.5-3 Implementation Plan Elements			
Source	**Action**	**Implementing Party**	**Completion Timeframe**
Sewer Collection System & Urban Runoff	Establish and implement a protocol to enhance efforts to identify and correct illicit connections to the storm drain system.	Sanitary sewer collection system authority, and Municipal stormwater entity(s)	6 months
Urban Runoff	1. Submit a plan that describes BMPs being implemented and additional BMPs that will be implemented to reduce discharges of bacteria to the beach. Include control of nuisance wildlife if it represents a likely source of bacteria to the beach. The plan shall include a schedule and milestones for implementation.	Municipal stormwater entity(s)	6 months
	2. Determine effectiveness of urban runoff controls: Assess beach monitoring data to determine if targets are met at the beach.	Municipal stormwater entity(s)	5 years
	After five years, begin enhanced implementation if targets not met		
	3. If targets are not met, submit: (a) a plan describing BMPs being implemented and additional BMPs that will be implemented to reduce discharges of bacteria to the beach. The plan shall include an implementation schedule and milestones. and (b) a supplemental monitoring plan (*supplemental to ongoing beach monitoring*) to investigate remaining bacteria sources to the beach. This plan may develop data and a quantitative rationale to support (i) locations and types of enhanced bacteria BMPs, and/or (ii) revision of the numeric targets to reflect bacteria contributions from non-controllable sources. Include an implementation schedule.	Municipal stormwater entity(s)	5.5 years
	4. Where pets at the beach may be a source of bacteria to a beach, establish and implement protocols to control pet waste through such measures as providing bags, trash receptacles, and signage.	Park authority or Municipal stormwater entity(s)	6 months
Vessels	Where vessels represent a potential source of bacteria to the beach, begin or boost “no dumping” education efforts; identify and implement other needed BMPs, such as improving pump outs and other infrastructure.	Port authority, or marina owner	6 months from discovery of source
Wildlife	Where nuisance wildlife represents a potential source of bacteria to the beach, and the beach is managed by a non-municipal park authority, establish and implement protocols to control this source of bacteria.	Park authority, or include in Urban Runoff enhanced BMPs plans	6 months from discovery of source

Table 7.2.5-4 Aquatic Park Beach Implementation Plan			
Source	**Action**	**Implementing Party**	**Completion Timeframe[a]**
Sanitary Sewer Collection System	1. Comply with Statewide General Waste Discharge Requirements for Sanitary Sewer Systems and Order No. R2-2013-0029.	Port of San Francisco and SFPUC	Ongoing
	2. Submit an enhanced Sewer System Management Plan and Operations and Maintenance Plan for the combined sewer system (O&M Plan), as applicable, acceptable to the Executive Officer, that prioritizes sewer system inspections and repairs in areas within ¼ mile of the beach or otherwise connected to the beach. Include a diagram of prioritized infrastructure, a time schedule for implementing short- and long-term plans, and, as necessary, a schedule for developing the funds needed for the capital improvement plan. Complete inspections and repairs.	SFPUC, Port of San Francisco, and San Francisco Maritime National Historic Park	6 months 3 years
	3. Determine effectiveness of sewer system repairs: Assess beach monitoring data to determine if targets are met at the beach.	SFPUC	5 years
	4. If targets are not met, submit an enhanced Sewer System Management Plan and O&M Plan as applicable, acceptable to the Executive Officer, that prioritizes sewer system inspections and repairs in areas within ½ mile of the beach or otherwise connected to the beach. Include a diagram of prioritized infrastructure, a time schedule for implementing short- and long-term plans, and, as necessary, a schedule for developing the funds needed for the capital improvement plan. Complete inspections and repairs.	SFPUC, Port of San Francisco, and San Francisco Maritime National Historic Park	5.5 years 8 years
	5. If private laterals are a likely source of bacteria to the beach, establish and implement a private lateral replacement program or refocus existing lateral program efforts to address these sources.	SFPUC, Port of San Francisco, San Francisco Maritime National Historic Park, and City of San Francisco	5 years
Sewer Collection System & Urban Runoff	Establish and implement a protocol to enhance efforts to identify and correct illicit connections to the storm drain system.	SFPUC, Port of San Francisco, and San Francisco Maritime National Historic Park	6 months
Urban Runoff	1. Submit a plan acceptable to the Executive Officer describing BMPs being implemented and additional BMPs that will be implemented to reduce discharges of bacteria to the beach. Include control of nuisance wildlife if it represents a likely source of bacteria to the beach. The plan shall include a schedule and	SFPUC, Port of San Francisco, San Francisco Maritime National Historic Park, and City of San	6 months

Table 7.2.5-4 Aquatic Park Beach Implementation Plan			
Source	**Action**	**Implementing Party**	**Completion Timeframe[a]**
	milestones for implementation.	Francisco	
	2. Determine effectiveness of urban runoff controls: Assess beach monitoring data to determine if targets are met at the beach.	SFPUC	5 years
	3. If targets are not met, submit, acceptable to the Executive Officer: (a) a plan describing BMPs being implemented and additional BMPs that will be implemented to reduce discharges of bacteria to the beach. The plan shall include an implementation schedule and milestones. and (b) a supplemental monitoring plan (*supplemental to ongoing beach monitoring*) to investigate remaining bacteria sources to the beach. This plan may develop data and a quantitative rational to support (i) locations and types of enhanced bacteria BMPs, and/or (ii) revision of the numeric targets to reflect bacteria contributions from non-controllable sources. Include an implementation schedule.	SFPUC, Port of San Francisco, San Francisco Maritime National Historic Park, and City of San Francisco	5.5 years
	4. Where pet waste may be a source of bacteria to a beach, establish and implement protocols to control pet waste through such measures as providing bags, trash receptacles, and signage.	San Francisco Maritime National Historic Park	6 months

[a] Timeframe begins on the effective date of this Basin Plan amendment

Table 7.2.5-5 Candlestick Point Beaches Implementation Plan			
Source	**Action**	**Implementing Party**	**Completion Timeframe[a]**
Sanitary Sewer Collection System	1. Comply with Statewide General Waste Discharge Requirements for sanitary sewer systems.	SFPUC and California State Parks	Ongoing
	2. Submit an enhanced Sewer System Management Plan and O&M Plan as applicable, acceptable to the Executive Officer, that prioritizes sewer system inspections and repairs in areas within ¼ mile of the beach or otherwise connected to the beach. Include a diagram of prioritized infrastructure, a time schedule for implementing short- and long-term plans, and, as necessary, a schedule for developing the funds needed for the capital improvement plan. Complete inspections and repairs.	SFPUC and California State Parks	6 months 3 years
	3. Determine effectiveness of sewer system repairs: Assess beach monitoring data to determine if targets are met at the beach.	SFPUC	5 years
	4. If targets are not met, submit an enhanced Sewer System Management Plan and O&M Plan as applicable, acceptable to the Executive Officer, that prioritizes sewer system inspections and repairs in areas within ½ mile of the beach or otherwise connected to the beach. Include a diagram of prioritized infrastructure, a time schedule for implementing short- and long-term plans, and, as necessary, a schedule for developing the funds needed for the capital improvement plan. Complete inspections and repairs.	SFPUC and California State Parks	5.5 years 8 years
	5. If private laterals are a likely source of bacteria to the beach, establish and implement a private lateral replacement program or refocus existing lateral program efforts to address these sources.	SFPUC and City of San Francisco	5 years
Sewer Collection System & Urban Runoff	Establish and implement a protocol to enhance efforts to identify and correct illicit connections to the storm drain system.	SFPUC and California State Parks	6 months
Urban Runoff	1. Submit a plan acceptable to the Executive Officer that describes BMPs being implemented and additional BMPs that will be implemented to reduce discharges of bacteria to the beach. Include control of nuisance wildlife if it represents a likely source of bacteria to the beach. The plan shall include a schedule and milestones for implementation.	SFPUC, California State Parks, and City of San Francisco	6 months
	2. Determine effectiveness of urban runoff controls: Assess beach monitoring data to determine if targets are met at the beach.	SFPUC	5 years
	3. If targets are not met, submit, acceptable to the	SFPUC, California State	5.5 years

Table 7.2.5-5 Candlestick Point Beaches Implementation Plan			
Source	**Action**	**Implementing Party**	**Completion Timeframe[a]**
	Executive Officer: (a) a plan describing BMPs being implemented and additional BMPs that will be implemented to reduce discharges of bacteria to the beach. The plan shall include an implementation schedule and milestones. and (b) a supplemental monitoring plan (*supplemental to ongoing beach monitoring*) to investigate remaining bacteria sources to the beach. This plan may develop data and a quantitative rational to support (i) locations and types of enhanced bacteria BMPs, and/or (ii) revision of the numeric targets to reflect bacteria contributions from non-controllable sources. Include an implementation schedule.	Parks, and City of San Francisco	
	4. Where pet waste may be a source of bacteria to a beach, establish and implement protocols to control pet waste through such measures as providing bags, trash receptacles and signage.	California State Parks	6 months

[a] Timeframe begins on the effective date of this Basin Plan amendment

Table 7.2.5-6 Crissy Field Beach Implementation Plan			
Source	**Action**	**Implementing Party**	**Completion Timeframe[a]**
Sanitary Sewer Collection System	1. Comply with Statewide General Waste Discharge Requirements for Sanitary Sewer Systems and Order No. R2-2013-0029.	Presidio Trust and SFPUC	Ongoing
	2a. Submit an enhanced Sewer System Management Plan and O&M Plan as applicable, acceptable to the Executive Officer, that prioritizes sewer system inspections and repairs in areas within ¼ mile of the beach or otherwise connected to the beach. Include a diagram of prioritized infrastructure, a time schedule for implementing short- and long-term plans, and, as necessary, a schedule for developing the funds needed for the capital improvement plan. Complete inspections and repairs.	Presidio Trust and SFPUC	6 months 3 years
	2b. Inspect laterals and all other components connecting SF Rec & Parks facilities to the sanitary sewer system. Repair all leaks. Submit annual status reports until all system components are inspected and repaired.	San Francisco Rec & Parks	1 year 3 years
	3. Determine effectiveness of sewer system repairs: Assess beach monitoring data to determine if targets are met at the beach.	SFPUC	5 years
	4. If targets are not met, submit an enhanced Sewer System Management Plan and O&M Plan as applicable, acceptable to the Executive Officer, that prioritizes sewer system inspections and repairs in areas within ½ mile of the beach or otherwise connected to the beach. Include a diagram of prioritized infrastructure, a time schedule for implementing short- and long-term plans, and, as necessary, a schedule for developing the funds needed for the capital improvement plan. Complete inspections and repairs.	Presidio Trust and SFPUC	5.5 years 8 years
	5. If private laterals are a likely source of bacteria to the beach, establish and implement a private lateral replacement program or refocus existing lateral program efforts to address these sources.	Presidio Trust and SFPUC	5 years
Sewer Collection System & Urban Runoff	Establish and implement a protocol to enhance efforts to identify and correct illicit connections to the storm drain system.	Presidio Trust and SFPUC	6 months
Urban Runoff	1. Submit a plan acceptable to the Executive Officer that describes BMPs being implemented and additional BMPs that will be implemented to reduce discharges of bacteria to the beach. Include control of nuisance wildlife if it represents a likely source of bacteria to the beach. The plan shall include a schedule and milestones for	Presidio Trust, Golden Gate National Recreation Area, SFPUC, and San Francisco	6 months

Table 7.2.5-6 Crissy Field Beach Implementation Plan			
Source	**Action**	**Implementing Party**	**Completion Timeframe[a]**
	implementation.	Rec & Parks	
	2. Determine effectiveness of urban runoff controls: Assess beach monitoring data to determine if targets are met at the beach.	SFPUC	5 years
	3. If targets are not met, submit, acceptable to the Executive Officer: (a) a plan describing BMPs being implemented and additional BMPs that will be implemented to reduce discharges of bacteria to the beach. The plan shall include an implementation schedule and milestones. and (b) a supplemental monitoring plan (*supplemental to ongoing beach monitoring*) to investigate remaining bacteria sources to the beach. This plan may develop data and a quantitative rational to support (i) locations and types of enhanced bacteria BMPs, and/or (ii) revision of the numeric targets to reflect bacteria contributions from non-controllable sources. Include an implementation schedule.	Presidio Trust, Golden Gate National Recreation Area, SFPUC, and San Francisco Rec & Parks	5.5 years
	4. Establish and implement protocols for enhancing efforts to control pet waste through such measures as providing bags, trash receptacles, signage at Crissy Beach, and increased rule enforcement during wet periods.	Golden Gate National Recreation Area	6 months

[a] Timeframe begins on the effective date of this Basin Plan amendment

Table 7.2.5-7 Marina Lagoon Beaches (Parkside Aquatic and Lakeshore) Implementation Plan			
Source	**Action**	**Implementing Party**	**Completion Timeframe[a]**
Sanitary Sewer Collection System	1. Comply with Statewide General Waste Discharge Requirements for Sanitary Sewer Systems.	City of San Mateo	Ongoing
	2. Comply with Cease and Desist Order No. R2-2009-0020 (CDO) and any future amendments. In next annual CDO report, submit enhancements to the Infrastructure Renewal and Capacity Assurance Plans, acceptable to the Executive Officer, that prioritize sewer system inspections and repairs in areas within ¼ mile of the beach to the extent possible within the framework of the CDO. Include a diagram of prioritized infrastructure and time schedule. Complete inspections and repairs in prioritized area(s).	City of San Mateo	According to due dates in Cease and Desist Order
	3. Determine effectiveness of sewer system repairs: Assess beach monitoring data to determine if targets are met at the beach.	City of San Mateo	5 years
	4. If targets are not met, submit enhanced Infrastructure Renewal and Capacity Assurance Plans, acceptable to the Executive Officer, that prioritize sewer system inspections and repairs in areas within ½ mile of the beach or otherwise connected to the beaches. Include a diagram of prioritized infrastructure, a time schedule for implementing short- and long-term plans, and, as necessary, a schedule for developing the funds needed for the capital improvement plan. Complete inspections and repairs.	City of San Mateo	5.5 years 8 years
	5. If private laterals are a likely source of bacteria to the beach, establish and implement a private lateral replacement program or refocus existing lateral program efforts to address these sources.	City of San Mateo	2 years
Sewer Collection System & Urban Runoff	Establish and implement a protocol to enhance efforts to identify and correct illicit connections to the storm drain system.	City of San Mateo	6 months
Urban Runoff	1. Submit a plan acceptable to the Executive Officer that describes BMPs being implemented and additional BMPs that will be implemented to reduce discharges of bacteria to the beach. Include control of nuisance wildlife. The plan shall include a schedule and milestones for implementation.	City of San Mateo	6 months
	2. Determine effectiveness of urban runoff controls: Assess beach monitoring data to determine if targets are met at the beach.	City of San Mateo	5 years

Table 7.2.5-7 Marina Lagoon Beaches (Parkside Aquatic and Lakeshore) Implementation Plan			
Source	**Action**	**Implementing Party**	**Completion Timeframe[a]**
	3. If targets are not met, submit, acceptable to the Executive Officer: (a) a plan describing BMPs being implemented and additional BMPs that will be implemented to reduce discharges of bacteria to the beach. The plan shall include an implementation schedule and milestones. and (b) a supplemental monitoring plan (*supplemental to ongoing beach monitoring*) to investigate remaining bacteria sources to the beach. This plan may develop data and a quantitative rational to support (i) locations and types of enhanced bacteria BMPs, and/or (ii) revision of the numeric targets to reflect bacteria contributions from non-controllable sources. Include an implementation schedule.	City of San Mateo	5.5 years

[a] Timeframe begins on the effective date of this Basin Plan amendment

7.2.5.7 China Camp and McNears Beaches Implementation

Both China Camp and McNears beaches already meet the numeric targets for Enterococcus, and therefore no further implementation actions are necessary.

7.2.5.8 Water Quality Monitoring

Implementing parties are responsible for developing and implementing a monitoring plan sufficient to assess compliance with the numeric targets at the beaches. At a minimum, implementing parties shall continue monitoring the beaches as required under California Health and Safety Code section 115880 and provide a data evaluation report annually to the Water Board. It is recommended that the implementing parties select a lead entity to assess the monitoring data and compile the annual report.

If, after approximately five years, implementation actions do not result in achievement of numeric targets at a beach, supplemental monitoring (in addition to beach monitoring) is required to investigate and identify bacteria sources in the watershed that could be contributing to the bacteria impairment. This monitoring is intended to answer questions such as:

- Could bacteria sources be reduced by placing enhanced urban runoff BMPs in a certain location?
- Could bacteria sources be reduced by focusing sewer system investigations and repairs in a certain location?
- Are natural sources of bacteria contributing to a significant degree to the impairment at the beach?

Implementing parties need not wait four years if they wish to begin supplemental monitoring earlier. At any time, implementing parties may present data indicating the presence of natural sources of bacteria to the beach, such as non-nuisance wildfowl, to the Executive Officer of the Water Board, and the Water Board may consider developing new allocations that could include a natural source exclusion. Until such action is taken by the Water Board, the implementation requirements and completion dates shall remain in effect.

Beach monitoring and supplemental monitoring requirements are included on Tables 7.2.5-4 through 7.2.5-7.

7.2.5.9 Adaptive Implementation

The Water Board will adapt the TMDL and Implementation Plans to incorporate new and relevant scientific information such that effective and efficient measures can be taken to achieve standards. At approximately six-year intervals, Water Board staff will evaluate new and relevant information from implementation actions, water quality monitoring results, and the scientific literature, including any local reference system studies, U.S. EPA's revised recommended bacteria criteria, or new or revised State bacteria water quality objectives, and assess progress toward attaining the TMDL. Water Board staff will present that information to the Water Board, and the Water Board will consider a Basin Plan amendment that reflects any necessary modifications to the targets, load and wasteload allocations, or implementation plan.

EXHIBIT 4

California Regional Water Quality Control Board

San Francisco Bay Region

1515 Clay Street, Suite 1400, Oakland, CA 94612
(510) 622-2300 • Fax (510) 622-2460
http://www.waterboards.ca.gov/sanfranciscobay

and

U.S. Environmental Protection Agency

Region IX

75 Hawthorne Street, San Francisco, California 94105
(415) 947-8707 * Fax (415) 947-3549
http://www.epa.gov/region9/

ORDER NO. R2-2009-0062
NPDES NO. CA0037681

WASTE DISCHARGE REQUIREMENTS FOR THE CITY AND COUNTY OF SAN FRANCISCO OCEANSIDE WATER POLLUTION CONTROL PLANT (SOUTHWEST OCEAN OUTFALL) AND COLLECTION SYSTEM, INCLUDING THE WESTSIDE WET WEATHER FACILITIES

The following Discharger is subject to waste discharge requirements as set forth in this Order.

Table 1. Discharger Information

Discharger	City and County of San Francisco
Name of Facility	Oceanside Water Pollution Control Plant and Collection System, Including the Westside Wet Weather Facilities
Facility Address	3500 Great Highway
	San Francisco, CA 94132
	San Francisco County
The U.S. Environmental Protection Agency (USEPA) and the Regional Water Quality Control Board have classified this discharge as a **major** discharge.	

Discharges by the City and County of San Francisco from the discharge points identified below are subject to waste discharge requirements as set forth in this Order.

Table 2. Discharge Location

Discharge Point	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
001	Secondary Treated Wastewater, Combined Primary and Secondary Treated Wastewater and Stormwater, and the equivalent of wet weather primary treated combined Wastewater and Stormwater decant flow from a Combined Sewer System	37 º 42' 18" N	122 º 34' 39" W	Pacific Ocean, Offshore

CSD-001	The equivalent of wet weather Primary Treated Combined Wastewater and Stormwater Discharge	37 ° 42' 55" N	122 ° 30' 16" W	Pacific Ocean (Fort Funston, Ocean Beach)
CSD-002	The equivalent of wet weather Primary Treated Combined Wastewater and Stormwater Discharge	37 ° 44' 16" N	122 ° 30' 29" W	Pacific Ocean (Vicente St., Ocean Beach)
CSD-003	The equivalent of wet weather Primary Treated Combined Wastewater and Stormwater Discharge	37 ° 45' 50" N	122 ° 30' 42" W	Pacific Ocean (Lincoln Way, Ocean Beach)
CSD-004	The equivalent of wet weather Primary Treated Combined Wastewater and Stormwater Discharge	37 ° 47' 5" N	122 ° 30' 37" W	Pacific Ocean (Mile Rock)
CSD-005	The equivalent of wet weather Primary Treated Combined Wastewater and Stormwater Discharge	37 ° 47' 16" N	122 ° 29' 30" W	Pacific Ocean (China Beach)
CSD-006	The equivalent of wet weather Primary Treated Combined Wastewater and Stormwater Discharge	37 ° 47' 22" N	122 ° 29' 16" W	Pacific Ocean (Baker Beach)
CSD-007	The equivalent of wet weather Primary Treated Combined Wastewater and Stormwater Discharge	37 ° 47' 22" N	122 ° 29' 13" W	Pacific Ocean (Baker Beach)

Table 3. Administrative Information

This Order was adopted by the Regional Water Quality Control Board on:	August 12, 2009
This Order shall become effective on:	October 1, 2009
This Order shall expire on:	September 30, 2014
CIWQS Regulatory Measure	360578
The Discharger shall file a Report of Waste Discharge in accordance with title 23, California Code of Regulations, as application for issuance of new waste discharge requirements no later than:	180 days prior to the Order expiration date

The signatures below certify that the following is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on August 12, 2009, and of a National Pollutant Discharge Elimination System permit issued by the United States Environmental Protection Agency, Region IX, on the date below.

Bruce H. Wolfe, Executive Officer
California Water Quality Control Board
San Francisco Bay Region

Date: 8/12/09

Alexis Strauss, Director
Water Division
USEPA Region IX

Date: 12 August 2009

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I. FACILITY INFORMATION

The following Discharger is subject to waste discharge requirements as set forth in this Order.

Table 4. Facility Information

Discharger	City and County of San Francisco
Name of Facility	Oceanside Water Pollution Control Plant and Collection System, Including Westside Wet Weather Facilities
Facility Address	3500 Great Highway
	San Francisco, CA 94132
	San Francisco County
Facility Contact, Title, Phone	Tommy Moala, Assistant General Manager, (415) 554-2465
CIWQS Place ID	256498
CIWQS Party ID	39680
Mailing Address	San Francisco Public Utilities Commission/Wastewater Enterprise
	1155 Market Street, 11th Floor
	San Francisco CA 94103
Type of Facility	Publicly Owned Treatment Works (POTW)
Facility Design Flow	<u>Oceanside Plant</u> 43 MGD, maximum dry weather design flow (providing secondary treatment) 65 MGD maximum wet weather design flow (providing secondary treatment for 43 MGD and primary treatment for an additional 22 MGD)
	<u>Westside Wet Weather Facilities</u> Collection system flows greater than 65 MGD and less than 175 MGD receive the equivalent of wet weather primary treatment in the Westside Wet Weather Facilities (storage/transports) and are discharged at the Southwest Ocean Outfall. Flows greater than 175 MGD receive the equivalent of wet weather primary treatment in the Westside Wet Weather Facilities and are discharged at authorized combined sewer overflow discharge points on the shoreline.

II. FINDINGS

The U.S. Environmental Protection Agency (USEPA) and the California Regional Water Quality Control Board, San Francisco Bay Region (Regional Water Board), find:

A. **Background.** The City and County of San Francisco (hereinafter the Discharger) is currently discharging pursuant to Order No. R2-2003-0073 and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0037681. The Discharger submitted a Report of Waste Discharge, dated March 28, 2008, and applied to renew its NPDES permit to discharge up to 65 MGD of treated wastewater from the Oceanside Water Pollution Control Plant (Plant), through the Southwest Ocean Outfall, and primary treated wet weather flows from the Westside Wet Weather Facilities.

For the purposes of this Order, references to the “discharger” or “permittee” in applicable federal and State laws, regulations, plans, or policy are held to be equivalent to references to the Discharger herein.

B. **Facility Description.** The Discharger is the owner and operator of the Oceanside Plant and its associated collection system, a combined sewer system that includes the Westside Wet Weather Facilities. The collection system includes approximately 300 miles of sewer pipes on the westside watershed of the city that covers the areas of Richmond, Sunset, and Lake Merced as well as a small portion of Daly City. The system also includes four all weather pump stations and two wet weather pump stations.

Treatment at the Oceanside Plant, which has a peak secondary treatment capacity of 43 MGD, includes coarse screening at the Westside Pump Station, fine screening and grit removal at the Plant headworks, primary sedimentation, activated sludge treatment by a pure oxygen process, and secondary clarification. Secondary treated wastewater is discharged to the Pacific Ocean between 3.4 and 3.6 nautical miles offshore, at Discharge Point 001 - the Southwest Ocean Outfall. These receiving waters are waters of the United States but are beyond the territorial waters of the State of California, which are three nautical miles from the low water mark at shore. During wet weather periods of high influent flow, the Oceanside Plant can provide primary treatment for an additional 22 MGD of influent flow, which, following treatment, is blended with secondary treated wastewater (i.e., a total treatment capacity of 65 MGD) and discharged at Discharge Point 001.

The Discharger's collection system includes three large storage/transport structures – the Westside Transport, a 49.3 million gallon box-like structure located beneath the Great Highway; the Richmond Transport, a 12 million gallon structure located to the north; and the Lake Merced Transport, a 10 million gallon structure located to the south. The combined storage capacity of these "Westside Wet Weather Facilities" is 73.5 million gallons, which includes 2.2 million gallons of capacity within the sewer lines.

Plant operations depend on rainfall, forecasts, and storage conditions in the Westside, Lake Merced, and Richmond Transport structures. Collection system flows that exceed the Oceanside Plant's treatment capacity of 65 MGD are stored in the Westside Wet Weather Facilities, which provide the equivalent of wet weather primary treatment through solids settling, skimming of floatable solids, and screening at pump stations. Combined wastewater from the storage/transport structures is pumped via the Westside Pump Station to Discharge Point 001, until the pumping capacity of the combined sewer system facilities to the outfall is reached at 175 MGD. Combined wastewater flows greater than 175 MGD also receive treatment in the storage/transport structures (the equivalent of wet weather primary treatment) but are discharged at the seven, near-shore combined sewer overflow discharge (CSOD) structures authorized by this Order. These receiving waters are waters of the United States and territorial waters of the State of California.

To be considered a discrete overflow discharge event, it must be separated by six hours in time from any other combined sewer overflow discharge. For the purposes of this permit, authorized, treated combined sewer overflow discharges from the near-shore discharge structures are referred to as combined sewer overflow discharges (CSODs). Unauthorized, untreated combined sewer overflow discharges from combined sewer systems are referred to as combined sewer overflows (CSOs).

Wastewater solids removed by settling in the Westside Wet Weather Facilities are flushed to the Plant when wet weather flows subside. Primary and secondary solids from the Plant are blended and thickened using gravity belt thickeners, anaerobically digested, dewatered, and beneficially re-used at permitted sites.

Attachment B provides a map of the area around the facility. Attachment C provides a flow schematic of the Plant and the Westside Wet Weather Facilities.

C. **Legal Authorities.** This Order is issued pursuant to federal Clean Water Act (CWA) §402 and the California Water Code (CWC) Chapter 5.5, Division 7 (commencing with §13370). It shall serve as an NPDES permit for point source discharges from this facility to surface waters. This Order also serves as Waste Discharge Requirements (WDRs) pursuant to CWC Article 4, Chapter 4, Division 7 (commencing with §13260). Because this Order concerns discharges to waters of the United States, both within and beyond State territorial waters, USEPA and Regional Water Board are jointly issuing the permit.

D. **Background and Rationale for Requirements.** The requirements of this Order are based on information submitted as part of the application, through monitoring and reporting programs, and other available information. The Fact Sheet (Attachment F), which contains background information and rationale for the requirements established by the Order, is hereby incorporated by reference into this Order and constitutes part of the Findings for this Order. Attachments A through E, and G through H are also incorporated into this Order by reference.

E. **California Environmental Quality Act (CEQA).** Under Water Code section 13389, this action to adopt an NPDES permit is exempt from the provisions of CEQA. Similarly, pursuant to CWA §511(c), this action to reissue an NPDES permit does not trigger the requirements of the National Environmental Policy Act [42 U.S.C. 4321 et seq.].

F. **Technology Based Effluent Limitations.** CWA §301(b) and NPDES regulations at 40 CFR 122.44 require that permits include conditions meeting applicable technology-based requirements at a minimum, and any more stringent effluent limitations necessary to meet applicable water quality standards. Plant discharges authorized by this Order must meet the minimum federal technology-based requirements for POTWs established by USEPA at 40 CFR 133 (Secondary Treatment Regulation). For wet weather discharges, this Order includes technology-based requirements based on USEPA's Combined Sewer Overflow Control Policy. The Fact Sheet contains a discussion on the development of the technology-based effluent limitations and requirements.

G. **Water Quality Based Effluent Limitations.** CWA §301(b) and NPDES regulations at 40 CFR 122.44(d) require that permits include limitations more stringent than applicable federal technology-based requirements where necessary to achieve applicable water quality standards.

40 CFR 122.44(d)(1)(i) mandates that permits include effluent limitations for all pollutants that are or may be discharged at levels that have the reasonable potential to cause or contribute to an exceedance of a water quality standard, including numeric and narrative objectives within a standard. Where reasonable potential has been established

for a pollutant, but there is no numeric criterion or objective for the pollutant, water quality-based effluent limitations (WQBELs) must be established using:

- USEPA criteria guidance under CWA §304(a), supplemented where necessary by other relevant information;
- an indicator parameter for the pollutant of concern; or
- a calculated numeric water quality criterion, such as a proposed state criterion or policy interpreting the State's narrative criterion, supplemented with other relevant information, as provided in 40 CFR 122.44(d)(1)(vi).

H. **Water Quality Control Plans.** The *Water Quality Control Plan for the San Francisco Bay Basin* (the Basin Plan) is the Regional Water Board's master water quality control planning document. It designates beneficial uses and water quality objectives for waters of the State, including surface water and groundwaters, and includes programs of implementation to achieve water quality objectives. The Basin Plan was duly adopted by the Regional Water Board and approved by the State Water Resources Control Board (State Water Board), USEPA, and the Office of Administrative Law, as required. For the protection of ocean waters of the State, the Basin Plan incorporates by reference provisions of the *Water Quality Control Plan for Ocean Waters of California* (the Ocean Plan).

The Basin Plan implements State Water Board Resolution No. 88-63, which establishes State policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply (MUN). As the total dissolved solids (TDS) levels of marine waters significantly exceed 3,000 mg/L, ocean waters meet an exception to Resolution No. 88-63, and therefore, the MUN designation does not apply. According to Basin Plan Table 2-1, beneficial uses of the Pacific Ocean are as follows.

Table 5. Beneficial Uses

Receiving Water	Basin Plan Beneficial Uses
Territorial waters of the State of California within the Pacific Ocean	• Industrial Service Supply • Ocean, Commercial, and Sport Fishing • Shellfish Harvesting • Marine Habitat • Fish Migration • Preservation of Rare and Endangered Species • Fish Spawning • Wildlife Habitat • Water Contact Recreation • Noncontact Water Recreation • Navigation

Requirements of this Order implement the Basin Plan.

I. **California Ocean Plan.** The State Water Board adopted the *Water Quality Control Plan for Ocean Waters of California* (Ocean Plan) in 1972 and amended it in 1978, 1983, 1988, 1990, 1997, 2000, and 2005. The State Water Board adopted the latest amendment on April 21, 2005, and it became effective on February 14, 2006. The Ocean Plan applies, in its entirety, to point source discharges to the territorial waters of the State as defined by California law to the extent that these waters are outside of enclosed bays, estuaries, and coastal lagoons. The Ocean Plan identifies the following beneficial uses of ocean waters of the State: Industrial Water Supply; Water Contact and Non-contact Recreation, Including Aesthetic Enjoyment; Navigation; Commercial and Sport Fishing; Mariculture; Preservation and Enhancement of Designated Areas of Special Biological Significance; Rare and Endangered Species; Marine Habitat; Fish Migration; Fish Spawning; and Shellfish Harvesting. To protect beneficial uses, the Ocean Plan establishes water quality objectives and a program of implementation for discharges to State territorial waters.

Discharge Point 001, the Southwest Ocean Outfall, is 3.4 to 3.6 nautical miles offshore in federal waters. The territorial waters of the State end three nautical miles from shore. The Ocean Plan (Appendix 1, Ocean Waters) states, "If a discharge outside the territorial waters of the State could affect the quality of the waters of the State, the discharge may be regulated to assure no violation of the Ocean Plan will occur in ocean waters." For the reasons set forth in the Fact Sheet (Appendix F), the Regional Water Board finds that the discharge at Discharge Point 001 could not affect the quality of the waters of the State during dry weather. During wet weather, the Ocean Plan defers to the Combined Sewer Overflow Control Policy, discussed in Finding K, below. Therefore, this Order does not regulate the discharge at Discharge Point 001 directly through the Water Board's Ocean Plan authorities.

J. **Determination of Unreasonable Degradation of the Marine Environment.** Discharges from the Southwest Ocean Outfall are to waters of the United States beyond the territorial waters of the State of California. Federal regulations at 40 CFR 125.122 require the permitting authority to determine whether a discharge will cause unreasonable degradation of the marine environment. Based on 40 CFR 125.22(b), USEPA conducted a reasonable potential analysis using Ocean Plan objectives and included numeric permit limitations, based on the Ocean Plan's dilution procedures, for toxicity and mercury, the only numeric Ocean Plan objectives for which USEPA found reasonable potential to cause or contribute to an exceedance of water quality standards. USEPA also included narrative receiving water limitations for the Ocean Plan narrative objectives for which it found reasonable potential. For determining reasonable potential for the dioxins, USEPA used recently updated Toxicity Equivalency Factors (TEFs) published by the World Health Organization in 2005, as well as the congener-specific Bioconcentration Equivalency Factors (BEFs) used for the Great Lakes System. The "Bay Area Clean Water Agencies' Draft Dioxin Issue Paper: Expert Panel Response and Recommendations," dated April 4, 2008, proposed using both TEFs and BEFs in developing NPDES permit limits for dioxins. This approach incorporates recent scientific information for dioxins on a congener-specific basis, while continuing to use the Ocean Plan water quality objective for dioxins (TCDD equivalents) and standards implementation procedures. Given the unique issues dioxins present, USEPA has prepared a determination of no unreasonable degradation based on the ten factors under 40 CFR 125.122(a) (Appendix 1 to the Fact Sheet). USEPA has determined that no unreasonable degradation of the marine environment will result from

the discharges of dioxins through the Southwest Ocean Outfall as authorized under this Order, with all the limitations, conditions, and monitoring requirements in effect.

K. **Combined Sewer Overflow Control Policy.** Wet weather flows from combined sewer systems are subject to CWA §301(b)(1)(A) and are not subject to secondary treatment regulations. Wet weather flows from combined sewer systems are addressed by the Combined Sewer Overflow Control Policy (59 Federal Register 18688-18698). The *Wet Weather Water Quality Act of 2000* incorporated this policy into the CWA.

The policy establishes a consistent national approach for controlling discharges from combined sewers to the nation's waters. Using the NPDES permit program, the policy initiates a two-phased process. During the first phase, a discharger is required to implement "nine minimum controls" (e.g., prevent dry weather overflows). These controls constitute the technology-based requirements of the CWA as applied to combined sewer facilities (i.e., best conventional pollutant control technology, BCT, and best available control technology economically achievable, BAT). The controls are intended to provide immediate and relatively low-cost water quality improvements for facilities that, unlike the Discharger, have not implemented a long-term control plan. During the first phase, a discharger is required to initiate development of a long-term control plan to select controls to comply with water quality standards, based on consideration of the discharger's financial capabilities.

The second phase of the process involves implementation of the long-term control plan developed in the first phase. The purpose of this long-term control plan is to comply with CWA water quality requirements. The Discharger's program, which continues to implement the Discharger's long-term plan, is consistent with the policy. This Order implements the policy and is consistent with the Regional Water Board policy on wet weather overflows described in Basin Plan Section 4.9. During wet weather, CSODs from shoreline discharge points CSD-001 through CSD-007 and the Southwest Ocean Outfall are subject to this policy.

L. **Alaska Rule.** On March 30, 2000, USEPA revised its regulation that specifies when new and revised state and tribal water quality standards (WQS) become effective for CWA purposes [65 FR 24641 (April 27, 2000) (codified at 40 CFR 131.21)]. Under the revised regulation (also known as the Alaska Rule), new and revised standards submitted to USEPA after May 30, 2000, must be approved by USEPA before being used for CWA purposes. The final rule also provides that standards already in effect and submitted to USEPA by May 30, 2000, may be used for CWA purposes, whether or not approved by USEPA.

M. **Stringency of Requirements for Individual Pollutants.** This Order contains both technology-based and water quality-based effluent limitations for individual pollutants. The technology-based effluent limitations consist of restrictions on biochemical oxygen demand (BOD), total suspended solids (TSS), and pH. Restrictions on these pollutants are discussed in Section IV.B of the Fact Sheet (Attachment F). This Order's technology-based pollutant restrictions implement the minimum applicable federal technology-based requirements. In addition, this Order contains effluent limitations more stringent than the minimum federal technology-based requirements. The water quality-based limits are

necessary to meet water quality standards. They are not more stringent than required by the CWA.

Water quality-based effluent limitations have been derived to implement water quality objectives that protect beneficial uses. Both beneficial uses and water quality objectives in State waters have been approved pursuant to federal law and are the applicable water quality standards. The procedures used for this Order to calculate individual water quality-based effluent limitations for State waters are based on the California Ocean Plan, which was approved by USEPA on February 14, 2006.

N. **Antidegradation Policy**. NPDES regulations at 40 CFR 131.12 require that State water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution No. 68-16. Resolution No. 68-16 incorporates the federal antidegradation policy where the federal policy applies under federal law and requires that existing quality of waters be maintained unless degradation is justified based on specific findings. Water quality plans implement and incorporate by reference, both the State and federal antidegradation policies. The permitted discharges are consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Board Resolution No. 68-16 because there is no increase in authorized flow and effluent limitations are at least as stringent as in the previous permit.

O. **Anti-Backsliding Requirements.** CWA Sections 402(o)(2) and 303(d)(4) and NPDES regulations at 40 CFR 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require effluent limitations in a reissued permit to be as stringent as those in the previous permit, with some exceptions where limitations may be relaxed. With the exception of acute and chronic toxicity, all effluent limitations in this Order are at least as stringent as the effluent limitations in the previous permit. Compliance with anti-backsliding requirements is discussed in Fact Sheet section IV.C.6.

P. **Endangered Species Act.** This Order does not authorize any act that results in the taking of a threatened or endangered species or any act that is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish and Game Code sections 2050 to 2097) or the federal Endangered Species Act (16 U.S.C.A. sections 1531 to 1544). This Order requires compliance with effluent limits, receiving water limits, and other requirements to protect the beneficial uses of waters of the State. The Discharger is responsible for meeting all requirements of applicable State and federal law pertaining to threatened and endangered species.

Section 7(a)(2) of the federal Endangered Species Act requires USEPA, in reissuing this NPDES permit, to ensure, after consultation with appropriate agencies that discharges at the Southwest Ocean Outfall are not likely to jeopardize the continued existence of any threatened or endangered species or result in the destruction or adverse modification of critical habitat for such species. USEPA has initiated informal consultation with National Oceanic Atmospheric Administration.

Q. **Monitoring and Reporting.** NPDES regulations at 40 CFR 122.48 require that all NPDES permits specify requirements for recording and reporting monitoring results. CWC §13267

and §13383 authorize the Regional Water Board to require technical and monitoring reports. The Monitoring and Reporting Program accompanying this Order (Attachment E) establishes monitoring and reporting requirements to implement federal and State requirements.

R. **Standard and Special Provisions.** Federal Standard Provisions, which apply to all NPDES permits in accordance with 40 CFR 122.41, and additional conditions applicable to specified categories of permits in accordance with 40 CFR 122.42, are provided in Attachment D. The Discharger must comply with all federal standard provisions and with those additional conditions that apply pursuant to 40 CFR 122.42. The Regional Water Board has also included State standard provisions in this Order as Attachment G. The rationale for these special provisions is provided in the Fact Sheet (Attachment F). Where federal standard provisions are duplicative with State standard provisions, the federal standard provisions will apply and any excursion from a duplicative standard provision will not be interpreted as two excursions.

S. **Notification of Interested Parties.** The USEPA and Regional Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe Waste Discharge Requirements for the discharges described herein and has provided them with an opportunity to submit written comments and recommendations. Details of the notification are provided in the Fact Sheet, which accompanies this Order.

T. **Consideration of Public Comment.** The Regional Water Board, in a public meeting, heard and considered all comments pertaining to the discharges. Details of the public hearing are provided in the Fact Sheet of this Order.

THEREFORE, IT IS HEREBY ORDERED, that this Order supersedes Order No. R2-2003-0073, except for enforcement purposes, and in order to meet the provisions contained in CWC Division 7 (commencing with §13000) and regulations adopted hereunder, and the provisions of the federal CWA and regulations and guidelines adopted thereunder, the Discharger shall comply with the requirements in this Order.

III. DISCHARGE PROHIBITIONS

A. Discharge of treated wastewater at a location or in a manner different from that described by this Order is prohibited.

B. Discharge from Discharge Point 001 that does not receive an initial dilution of at least 150:1 is prohibited.

C. Bypass of secondary treatment facilities at the Oceanside Plant is prohibited, except during a wet weather day, as defined by this Order (see Definitions, Attachment A), or as provided for by NPDES regulations at 40 CFR 122.41(m)(4) and in Section IV.B of *Regional Standard Provisions, and Monitoring and Reporting Requirements (Supplement to Attachment D) for NPDES Wastewater Discharge Permits*, July 2009 (Attachment G).

D. Discharge of wastewater at a location other than Discharge Point 001 is prohibited, except on wet weather days (as defined in Attachment A) when the capacity of the system to discharge to Discharge Point 001 has been exceeded.

E. Discharge of wastewater at Discharge Points CSD-001 through CSD-007 is prohibited, except on wet weather days (as defined in Attachment A) and in accordance with the terms of this Order.

F. Plant discharges shall not exceed 43 MGD at Monitoring Location EFF-001 during dry weather. Compliance with this prohibition shall be based on average dry weather flow determined over three consecutive dry weather months.

G. Any CSO that results in a discharge of untreated or partially treated wastewater to waters of the United States is prohibited. This does not include authorized combined sewer overflow discharges (CSODs).

H. The discharge of municipal and industrial waste sludge directly or indirectly to the ocean, or into a waste stream that discharges to the ocean without further treatment, is prohibited.

I. The discharge of waste to designated Areas of Special Biological Significance, except as provided by Ocean Plan Chapter III.E, is prohibited.

J. Degradation of harvestable shellfish in the area as a result of dry weather discharge from Discharge Point 001 is prohibited.

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations for Dry Weather – Discharge Point 001

The following effluent limitations apply during dry weather days, as defined in Attachment A. Limitations, conditions, and other requirements applicable during wet weather conditions are established in Section VI.C of this Order.

1. Effluent Limitations – Discharge Point 001

a. The Discharger shall comply with the following effluent limitations at Discharge Point 001, with compliance measured at Monitoring Location EFF-001 as described in the attached Monitoring and Reporting Program:

Table 6. Effluent Limitations for Conventional Pollutants, Discharge Point 001

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
BOD_5[(1)] @ 20°C	mg/L	30	45	---	---	---
TSS[(2)]	mg/L	30	45	---	---	---
pH[(3)]	std units	---	---	-9.0--	6.0	9.0

(1) Biochemical Oxygen Demand
(2) Total Suspended Solids
(3) The pH effluent limit of 6.0 shall not apply if the discharger can demonstrate that the addition of inorganic chemicals or industrial sources is not causing the excursion below 6.0. The regulations at 40 CFR 133.102(c) allow the modification or elimination of pH limitations when it can be demonstrated that the addition of inorganic chemicals or industrial sources is not causing an excursion above or below the limits.

b. Percent Removal: The average monthly percent removal of BOD_5 @ 20°C and TSS shall not be less than 85 percent.

2. Effluent Limitations for Toxic Substances – Discharge Point 001

The Discharger shall comply with the following effluent limitations at Discharge Point 001, with compliance measured at Monitoring Location EFF-001 as described in the attached Monitoring and Reporting Program:

Table 7. Effluent Limitations for Toxic Pollutants, Discharge Point 001

Parameter	Units	Effluent Limitations[(1)][(3)]		
		6-month median	Maximum Daily	Instantaneous Maximum
Chronic Toxicity	TUc	N/A	150	N/A
Mercury[(2)]	µg/L	5.9	24	N/A

(1) Limitations apply to the concentration of all samples collected during the period (daily = 24-hour period)

(2) Mercury limitations are expressed as total recoverable metal.

(3) A daily or 6-month median value for a given constituent shall be considered noncompliant with the effluent limitations only if it exceeds the effluent limitation and the Reporting Level (RL) for that constituent. Ocean Plan Appendix II indicates the Minimum Level (ML) upon which the Reporting Level is based for compliance purposes. For mercury this is 0.2 µg/L.

3. Effluent Limits for Disinfectants

The effluent is not disinfected; thus there are no limits on chlorine or other disinfectant residuals.

B. Land Discharge Specifications

Not Applicable.

C. Reclamation Specifications

Not Applicable.

V. RECEIVING WATER LIMITATIONS

A. Surface Water Limitations

Ocean Plan water quality objectives were used to determine the receiving water limitations in this Order. Dry Weather Day discharges authorized by this Order at Discharge Point 001 shall not cause exceedances of the following surface water limitations in ocean receiving waters. As indicated in the Fact Sheet (Attachment F, Section IV.C.6), disinfection to meet bacteria level objectives is not required. Attachment F Section III.C.4 describes an Ocean Plan exception for combined sewer overflows discharges.

1. Floating particulates and grease and oil shall not be visible.

2. The discharge of waste shall not cause aesthetically undesirable discoloration of the ocean surface.

3. Natural light shall not be significantly reduced at any point outside the initial dilution zone as the result of the discharge of waste.

4. The rate of deposition of inert solids and the characteristics of inert solids in ocean sediments shall not be changed such that benthic communities are degraded.

5. The dissolved oxygen concentration shall not at any time be depressed more than 10 percent from that which occurs naturally, as a result of the discharge of oxygen demanding waste material.

6. The pH shall not be changed at any time more than 0.2 units from that which occurs naturally.

7. The dissolved sulfide concentration of waters in and near sediments shall not be significantly increased above that present under natural conditions.

8. The concentration of organic materials in marine sediments shall not be increased to levels that would degrade marine life.

9. Nutrient levels shall not cause objectionable aquatic growths or degrade indigenous biota.

10. Marine communities, including vertebrate, invertebrate and plant species, shall not be degraded.

11. The natural taste, odor, and color of fish, shellfish, or other marine resources used for human consumption shall not be altered.

12. The concentration of organic materials in fish, shellfish, or other marine resources used for human consumption shall not bioaccumulate to levels that are harmful to human health.

B. Groundwater Limitations

Not Applicable

VI. PROVISIONS

A. Standard Provisions

1. The Discharger shall comply with all Standard Provisions included in **Attachment D** of this Order.

2. The Discharger shall comply with all applicable items of the *Regional Standard Provisions and Monitoring and Reporting Requirements (Supplement to Attachment D) for NPDES Wastewater Discharge Permits*, July 2009 **(Attachment G)**, including any amendments thereto.

3. If any discrepancies exist between requirements in the Order, the federal standard provisions included in Attachment D, and the Regional Standard Provisions included in Attachment G, the requirements in this Order prevail over requirements in Attachment D, which prevail over requirements in Attachment G.

B. Monitoring and Reporting Program (MRP) Requirements

The Discharger shall comply with the MRP, and future revisions thereto, in Attachment E. The Discharger shall also comply with all applicable items of the *Regional Standard Provisions and Monitoring and Reporting Requirements (Supplement to Attachment D) for NPDES Wastewater Discharge Permits*, July 2009 **(Attachment G)**.

C. Special Provisions

1. Re-opener Provisions

The Regional Water Board or USEPA, as appropriate, may modify or re-open this Order prior to its expiration date in any of the following circumstances as allowed by law.

a. If present or future investigations demonstrate that a discharge governed by this Order will have, or will cease to have, a reasonable potential to cause or contribute to adverse impacts on water quality or beneficial uses of the receiving waters.

b. If new or revised Water Quality Objectives (WQOs) or TMDLs come into effect for the receiving waters, effluent limitations may be modified as necessary to reflect the updated WQOs and waste load allocations in TMDLs. Adoption of effluent limitations as contained in this Order is not intended to restrict in any way future modifications based on legally adopted WQOs, TMDLs, or as otherwise permitted under regulations governing permit modifications.

c. If translator or other water quality studies provide a basis for determining that a permit condition should be modified.

d. If an administrative or judicial decision on a separate NPDES permit or WDR necessitates modifications of the requirements established by this Order.

e. As otherwise authorized by law.

The Discharger may request permit modification in any of the circumstances described above. Such a request shall include appropriate antidegradation and anti-backsliding analyses.

2. Special Studies, Technical Reports, and Additional Monitoring Requirements

a. Combined Sewer Collection System Overflow Study

The combined sewer system commingles stormwater and domestic and industrial sewage. Heavy storm events can potentially result in flows that exceed the collection system capacity, at least in some areas. The Discharger shall submit a report, for planning purposes, by June 30, 2012, evaluating the potential locations of such system excursions and the primary conditions that result in such events. The report shall evaluate the feasibility and effectiveness of alternatives to minimize these events.

b. Dilution Model Update and Stratification Data Collection

Available ambient data to determine stratification for the purposes of dilution modeling for this discharge is out-dated. The Discharger shall submit with the permit application for the next permit reissuance, ambient data collected during the term of this permit, as well as updated dilution modeling for use during the next permit reissuance. The discharger shall:

(1) Submit a work plan to USEPA and the Regional Water Board for stratification data collection no later than one year after the effective date of this Order. The purpose of the data collection effort is to determine the months of maximum stratification based on actual ocean observations. At a minimum, the work plan shall include the following tasks:

- Collect temperature and salinity data during the months of maximum stratification in the vicinity of the outfall uninfluenced by the waste-field;
- Record data at a minimum of five equally spaced depths and at an appropriate resolution to determine maximum stratification;
- Provide effluent temperature and salinity or density data and flow rate for the time period encompassing the study;
- Describe how the data will be collected, the location(s), sensors, and instruments to be deployed and equipment to be used; and
- Describe appropriate quality assurance protocols to be followed to ensure the data is of adequate quality and representative of actual conditions within the water column.

(2) Upon completion of data collection, the Discharger shall prepare and submit a data report in hard copy and electronic format to USEPA and the Regional Water Board. Records that include large data gaps, errors, or instrument failures may not be used for dilution modeling.

(3) No later than 4 years after the effective date of this Order, the Discharger shall submit a work plan for updated dilution modeling. This work plan shall include models to be used and model inputs and assumptions.

(4) No later than at the time of submittal of the application for permit reissuance, the Discharger shall submit updated dilution modeling runs, with all inputs and outputs presented in hard copy and electronic form.

3. Best Management Practices and Pollution Prevention

a. Pollution Minimization Program

The Discharger shall continue to implement and improve, in a manner acceptable to the Executive Officer, its existing Pollutant Minimization Program (PMP) to reduce pollutant loadings to the combined sewer system, and therefore to the receiving waters.

b. Annual Pollution Prevention Report

The Discharger shall submit an annual report, acceptable to the Executive Officer, no later than February 28th of each calendar year. The annual report shall cover January through December of the preceding year. Each annual report shall include at least the following information.

(1) *Brief description of the treatment plant, treatment plant processes and service area.*

(2) *Discussion of current pollutants of concern.* Periodically, the Discharger shall determine which pollutants are currently a problem and which pollutants may be potential future problems. This discussion shall address why the pollutants were identified as pollutants of concern.

(3) *Identification of sources of pollutants of concern.* This discussion shall address how the Discharger identifies pollutant sources. The Discharger should also identify sources or potential sources not directly within its ability or authority to control, such as pollutants in the potable water supply and air deposition.

(4) *Identification and implementation of measures to reduce the sources of the pollutants of concern.* This discussion shall identify and prioritize tasks to address the Discharger's pollutants of concern. The Discharger may implement the tasks themselves or participate in a regional, State, or national group to address its pollutants of concern whenever it is efficient and appropriate to do so. A time line shall be included for the implementation of each task.

(5) *Outreach to employees.* The Discharger shall inform its employees regarding pollutants of concern, potential sources, and how they might be able to help reduce the discharge of these pollutants. The Discharger may provide a forum for employees to provide input to the program.

(6) *Continuation of Public Outreach Program. The* Discharger shall prepare a public outreach program to communicate pollution minimization measures to its service area. Outreach may include participation in existing community events such as county fairs, initiating new community events such as displays and contests during Pollution Prevention Week, conducting school outreach programs, conducting plant tours, and providing public information in various media. Information shall be specific to target audiences. The Discharger shall coordinate with other agencies as appropriate.

(7) *Discussion of criteria used to measure PMP's and tasks' effectiveness.* The Discharger shall establish criteria to evaluate the effectiveness of its PMP. This discussion shall address specific criteria used to measure the effectiveness of each task identified in provisions VI.C.3.b(3 – 6), above.

(8) *Documentation of efforts and progress.* The Discharger shall describe all its PMP activities for the reporting year.

(9) *Evaluation of PMP's and tasks' effectiveness.* The Discharger shall use the criteria established in b.7, above, to evaluate the Program's and tasks' effectiveness.

(10) *Identification of specific tasks and time schedules for future efforts.* Based on the evaluation of effectiveness, the Discharger shall describe how it will continue or change its PMP tasks to more effectively reduce the loading of pollutants to the treatment plant, and subsequently, in its effluent.

The Discharger shall develop and conduct a PMP as further described below when there is evidence (e.g., sample results reported as DNQ when the effluent limitation is less than the ML, sample results from analytical methods more sensitive than those methods required by this Order, presence of whole effluent toxicity, health advisories for fish consumption, results of benthic or aquatic organism tissue sampling) that a pollutant identified in Table B of the Ocean Plan is present in the effluent above an effluent limitation that is calculated for a constituent contained in Table B of the Ocean Plan and either:

(i) The concentration of the pollutant is reported as DNQ and the effluent limitation is less than the reported ML; or

(ii) The concentration of the pollutant is reported as ND and the effluent limitation is less than the ML, using definitions described in Attachment A and reporting protocols described in MRP section X.B.4.

The PMP shall include, but not be limited to, the following actions and submittals acceptable to the Regional Water Board:

(i) An annual review and semi-annual monitoring of potential sources of the reportable pollutant(s), which may include fish tissue monitoring and other bio-uptake sampling; or alternative measures approved by the Executive Officer when it is demonstrated that source monitoring is unlikely to produce useful analytical data;

(ii) Quarterly monitoring for the reportable pollutant(s) in the influent to the wastewater treatment system; or alternative measures approved by the Executive Officer, when it is demonstrated that influent monitoring is unlikely to produce useful analytical data;

(iii) Submittal of a control strategy designed to proceed toward the goal of maintaining concentrations of the reportable pollutant(s) in the effluent at or below the effluent limitation;

(iv) Implementation of appropriate cost-effective control measures for the reportable pollutant(s), consistent with the control strategy; and

(v) An annual status report that shall be sent to the Regional Water Board including:

- All PMP monitoring results for the previous year;
- A list of potential sources of the reportable pollutant(s);
- A summary of all actions undertaken pursuant to the control strategy; and
- A description of actions to be taken in the following year.

4. Construction, Operation and Maintenance Specifications

a. Wastewater Facilities, Review and Evaluation, and Status Reports

(1) The Discharger shall operate and maintain its wastewater collection, treatment, and disposal facilities in a manner to ensure that all facilities are adequately staffed, supervised, financed, operated, maintained, repaired, and upgraded as necessary, in order to provide adequate and reliable transport, treatment, and disposal of all wastewater from both existing and planned future wastewater sources under the Discharger's service responsibilities.

(2) The Discharger shall regularly review and evaluate its wastewater facilities and operation practices in accordance with Section a.(1) above. Reviews and evaluations shall be conducted as an ongoing component of the Discharger's administration of its wastewater facilities.

(3) The Discharger shall provide USEPA and the Regional Water Board, upon request, a report describing the current status of its wastewater facilities and operation practices, including any recommended or planned actions and an estimated time schedule for these actions. The Discharger shall also include, in each annual SMR, a description or summary of its review and evaluation procedures, and wastewater facility programs or capital improvement projects.

b. Operations and Maintenance (O&M) Manual, Review and Status Reports

(1) The Discharger shall maintain an O&M Manual for the Plant and collection system. The O&M Manual shall be maintained in usable condition and be available for reference and use by all personnel.

(2) The Discharger shall regularly review, revise, or update, as necessary, the O&M Manual to ensure that it remains useful and relevant to current equipment and operation practices. The Discharger shall conduct reviews annually, and revise or update the O&M Manual as necessary. For any significant changes in treatment facility equipment or operation practices, the Discharger shall complete any revisions within 90 days.

(3) The Discharger shall provide USEPA and the Regional Water Board, upon request, a report describing the current status of its O&M Manual, including any recommended or planned actions and an estimated time schedule for these actions. The Discharger shall also include, in each annual SMR, a description or summary of review and evaluation procedures and changes to its operations and maintenance manual.

c. Contingency Plan, Review and Status Reports

(1) The Discharger shall maintain a Contingency Plan as prudent in accordance with current municipal facility emergency planning. The discharge of pollutants in violation of this Order when the Discharger has failed to develop

and adequately implement a Contingency Plan will be the basis for considering such a discharge a willful and negligent violation of this Order pursuant to CWC §13387.

(2) The Discharger shall annually review the Contingency Plan and update it, as necessary, so that the plan may remain useful and relevant to current equipment and operation practices.

(3) The Discharger shall provide USEPA and the Regional Water Board, upon request, a report describing the current status of its Contingency Plan review and update. The Discharger shall also include, in each annual SMR, a description or summary of its review and evaluation procedures and any changes to its Contingency Plan.

5. Special Provisions for Municipal Facilities

a. Pretreatment Program

(1) The Discharger shall implement and enforce its approved pretreatment program in accordance with federal Pretreatment Regulations (40 CFR 403), pretreatment standards promulgated under Sections 307(b), 307(c), and 307(d) of the CWA, pretreatment requirements specified under 40 CFR 122.44(j), and the requirements in Attachment H, "Pretreatment Requirements." The Discharger's responsibilities include, but are not limited to:

(i) Enforcement of National Pretreatment Standards of 40 CFR 403.5 and 403.6;

(ii) Implementation of its pretreatment program in accordance with legal authorities, policies, procedures, and financial provisions described in the General Pretreatment regulations (40 CFR 403) and its approved pretreatment program;

(iii) Submission of reports to USEPA, the State Water Board, and the Regional Water Board, as described in Attachment H "Pretreatment Requirements".

(iv) Evaluate the need to revise local limits under 40 CFR 403.5(c)(1), and within the term of this Order, submit a report acceptable to the Executive Officer describing the changes with a plan and schedule for implementation.

(2) The Discharger shall implement its approved pretreatment program and the program shall be an enforceable condition of this Order. If the Discharger fails to perform the pretreatment functions, the Regional Water Board, the State Water Board, or USEPA may take enforcement actions against the Discharger as authorized by the CWA .

b. Sludge Management Practices Requirements

(1) All sewage sludge generated by the discharger shall be disposed in a municipal solid waste landfill that meets the requirements of 40 CFR 258, land applied in accordance with the requirements in 40 CFR 503 Subpart B, or delivered to a composter for treatment and land application in accordance with the requirements in 40 CFR 503 Subpart B. The Discharger shall notify USEPA and the Regional Water Board 60 days prior to any change in use or disposal practices.

(2) Sludge treatment, storage, and disposal or reuse shall not create a nuisance, such as objectionable odors or flies, or result in groundwater contamination.

(3) The Discharger shall take all reasonable steps to prevent or minimize any sludge use or disposal that has a likelihood of adversely affecting human health or the environment.

(4) The discharge of sludge shall not cause waste material to be in a position where it is or can be carried from the sludge treatment and storage site and deposited in waters of the United States.

(5) The sludge treatment and storage site shall have facilities adequate to divert surface runoff from adjacent areas, to protect boundaries of the site from erosion, and to prevent any conditions that would cause drainage from the materials in the temporary storage site. Adequate protection is defined as protection from at least a 100-year storm and protection from the highest possible tidal stage that may occur.

(6) For sludge applied to land, placed on a surface disposal site, or fired in a sludge incinerator as defined in 40 CFR 503, the Discharger shall submit an annual report to USEPA and the Regional Water Board containing monitoring results and pathogen and vector attraction reduction requirements as specified by 40 CFR 503, by February 19 of each year, for the period covering the previous calendar year.

(7) Sludge disposed of in a municipal solid waste landfill shall meet the requirements of 40 CFR 258. In the annual self-monitoring report, the Discharger shall include the amount of sludge disposed of and the landfill to which it was sent.

(8) Permanent on-site sludge storage or disposal activities are not authorized by this Order. A report of Waste Discharge shall be filed and the site brought into compliance with all applicable regulations prior to commencement of any such activity.

(9) Sludge Monitoring and Reporting Provisions of this Order (Attachment G) apply to sludge handling, disposal, and reporting practices.

(10) The USEPA and the Regional Water Board may amend this Order prior to expiration if changes occur in applicable state and federal sludge regulations.

6. Combined Sewer Overflow (CSO) Control Policy Requirements (Wet Weather Controls)

In accordance with the Nine Minimum Controls of the USEPA *Combined Sewer Overflow Control Policy* (1994) and the Discharger's Long Term Control Plan, the Discharger shall maximize flow to the Plant and pollutant removal during wet weather.

a. Combined Sewer Operations and Maintenance Plan. The Discharger shall revise and update its Combined Sewer Operations and Maintenance Plan as necessary to ensure compliance with the Nine Minimum Controls and the Long Term Control Plan requirements of the Combined Sewer Overflow Control Policy. The Discharger shall submit a revised plan to the Regional Water Board by September 30, 2010, and following any subsequent revisions during the term of this Order.

b. Nine Minimum Controls. The Discharger shall continue to implement and comply with the following technology-based requirements.

(1) *Conduct Proper Operations and Regular Maintenance Programs*. The Discharger shall implement its Combined Sewer Operations and Maintenance Plan, which shall include the elements described below. The Discharger shall update the plan to incorporate changes to the system and shall operate and maintain the system according to the plan. The Discharger shall maintain records to document the implementation of the Combined Sewer Operations and Maintenance Plan.

(i) *Designation of a Manager for CSOs.* The Discharger shall designate a person to be responsible for the wastewater collection system and serve as the contact person regarding the operation of the combined sewer system. The Discharger shall notify USEPA and the Regional Water Board within 90 days of the designation of a new contact person.

(ii) *Inspection and Maintenance of the Combined Sewer System.* The Discharger shall:

- Inspect and maintain all overflow structures, regulators, pumping stations, and tide gates to ensure that they are in good working condition and adjusted to minimize overflows and prevent tidal inflow.

- Inspect each overflow outfall at least once per year. The inspection shall include, but not be limited to, entering the regulator structure, if accessible; determining the extent of debris and grit buildup; and removing any debris that may constrict flow, cause blockage, and result in a dry weather CSO. For overflow outfalls that are inaccessible,

the Discharger may perform a visual check of the overflow pipe to determine whether CSOs have occurred or could potentially occur during dry weather flow conditions.

- Record the results of the inspections in a maintenance log.

(iii) *Provision for Trained Staff*. The Discharger shall provide adequate staff to carry out the operation, maintenance, repair, and testing functions required to ensure compliance with the terms and conditions of this Order. Each member of the staff shall receive appropriate training.

(iv) *Allocation of Funds for Operation and Maintenance*. The Discharger shall allocate adequate funds specifically for CSO operation and maintenance activities.

(2) *Maximize Use of the Collection System for Storage.* The Discharger shall continue to maximize the use of the collection system for in-line storage. (Note that this provision refers to the use of collection system piping, not the storage basins/transports, for storage.)

(3) *Review and Modify Pretreatment Program*. The Discharger shall continue to implement selected controls to minimize the impact of non-domestic discharges to its collection system. At three-year intervals, the Discharger shall re-evaluate whether additional modifications to its pretreatment program are feasible or practical. The Discharger shall maintain records to document this evaluation and to document implementation of the selected controls to minimize non-domestic discharges to its collection system.

(4) *Maximize Flow to Plant*. The Discharger shall operate the Plant at maximum treatable flow during wet weather flow conditions. The Discharger shall report rainfall and influent flow data to USEPA and the Regional Water Board with SMRs required by the attached Monitoring and Reporting Program (Attachment E.)

Consistent with the objectives of the Combined Sewer Operations and Maintenance Plan, the Discharger shall ensure that the facility Operation and Maintenance Plan is implemented to maximize the volume of wastewater treated at the Plant and discharged via Discharge Point 001, consistent with the hydraulic capacities of the storage, transport, treatment, and disposal facilities.

(5) *Prohibit CSOs During Dry Weather*. Dry weather CSOs from Discharge Points CSO-001 through CSO-007 or other locations are prohibited. All CSOs must be responded to in accordance with Regional Standard Provisions, and Monitoring, and Reporting Requirements (Section V.E.2) as provided in Attachment G. The Discharger shall document in the inspection log each CSO event, the duration of the event, the cause of the event and the corrective measures taken.

(6) *Control Solid and Floatable Materials in CSODs.* The Discharger shall continue to implement measures to control solid and floatable materials in CSODs. These measures shall include:

(i) ensuring that all the CSO structures are baffled or that other means are used to reduce the volume of floatable materials in CSOs, and

(ii) removing solid or floatable materials captured in the storage/transport system in an acceptable manner prior to discharge to receiving waters.

(7) *Develop and Implement a Pollution Prevention Program*. The Discharger shall continue to implement a Pollution Prevention Program focused on reducing the impact of CSOs on receiving waters. This Pollution Prevention Program is authorized by federal regulations on CSOs. This program shall be developed and implemented in accordance with Provision VI.C.3.

(8) *Notify the Public of Overflows*. The Discharger shall continue to implement a public notification plan to inform citizens of when and where CSOs occur. The process shall include:

(i) a mechanism to alert persons using all receiving waters affected by overflows.

(ii) a system to determine the nature and duration of conditions resulting from overflows that are potentially harmful to users of these receiving waters.

Specifically, warning signs must be posted at beach locations where water contact recreation occurs whenever there is a discharge from the diversion structures. Such warning signs shall be posted on the same days as the overflow events unless the overflow occurs after 4:00 p.m., in which case, signs shall be posted by 8:00 a.m. The Discharger shall maintain records documenting public notification.

(9) *Monitor to Effectively Characterize CSO Impacts and the Efficacy of CSO Controls*. To comply with the Nine Minimum Controls as well as post construction compliance monitoring under the CSO Control Policy, the Discharger shall continue regular monitoring necessary to evaluate CSO controls. The monitoring shall build on the efforts and results of the Discharger described in its August 30, 2007, report, *Westside Study to Effectively Characterize Overflow Impacts and the Efficacy of Combined Sewer Overflow Controls.* The Discharger shall provide a summary report annually and submit a final report to USEPA and the Regional Water Board by September 30, 2014. The report shall include:

(i) Summary of existing data in order to show status and trends;
(ii) Monitoring of wet weather discharges;
(iii) Evaluation of results in order to effectively characterize CSO impacts and efficacy of CSO controls;

(iv) Review of CSO impacts and, if necessary, proposal of revisions to the CSOD control program, including the Nine Minimum Controls;
(v) Recreational use surveys, as described in the MRP, following CSO events, to track changes in uses over time; and
(vi) Summary of post-construction monitoring results and an analysis of CWA compliance with water quality standards and the protection of beneficial uses.

If water quality standards are not being attained, the Discharger shall submit a revised CSO control program that, once implemented, will attain water quality standards. The Discharger may also wish to consider the review and appropriate revision of water quality standards and implementation procedures on CSO-impacted waters.

c. Long-Term Control Plan. The Discharger shall comply with the following provisions:

(1) The Discharger shall optimize the operation of its system to minimize combined sewer discharges and maximize pollutant removal during all wet weather conditions.

(2) The Discharger shall capture for treatment, or storage and subsequent treatment, 100 percent of the combined sewage flow collected in the combined sewage system during precipitation events. Captured combined sewage shall be directed to either the Plant or the storage/transports. All combined sewage captured shall receive a minimum of the following treatment:

- Secondary treatment (at Plant), or
- Primary treatment (at Plant), or
- Flow-through treatment (in storage/transports).

(3) The Discharger shall comply with the following for wet weather Plant operations:

(i) The Plant shall have an influent flow rate of at least 43 MGD prior to initiating decant from the Westside Transport to Discharge Point 001.

(ii) The flow rate at Discharge Point 001 shall be at least 165 MGD within 2 hours of a discharge into the Pacific Ocean from Discharge Point CSD-002 or CSD-003.

(iii) The Sea Cliff Pump Station I shall be operated at maximum capacity prior to an overflow at Discharge Point CSD-005.

(iv) The Sea Cliff Pump Station II shall be operated at maximum capacity prior to an overflow at Discharge Point CSD-007.

(4) The Discharger shall comply with the following after rains subside:

(i) Treatment at the Plant shall continue until the Westside Drainage Basin storage/transports are empty of stormwater flows.

(ii) If the National Weather Service predicts a 30 percent chance of rain within the next 24 hours:

- Pumping shall be maximized from the Westside storage/transport via the Westside Pump Station to the Oceanside Plant and Discharge Point 001 until the level of combined sewage in the East Box is between 5 and 10 feet.

- Pumping shall be maximized from the Westside storage/transport via the Westside Pump Station to the Plant and/or Discharge Point 001 until the level of combined sewage in the West Box is essentially zero.

(iii) If the National Weather Service does not predict rain within the next 24 hours:

- Pumping shall be maximized from the Westside storage and transport until the level of combined sewage in the West Box is zero and total flow to the Oceanside Plant is less than 43 MGD.

7. Sensitive Areas Feasibility Report for Overflows

The Discharger shall submit a report, by December 31, 2011, implementing the "consideration of sensitive areas" section of the Combined Sewer Overflow Control Policy. At a minimum, the Discharger shall assess techniques (including green infrastructure and low impact development) to eliminate or relocate CSODs from sensitive areas and discuss the level of treatment for any remaining CSODs necessary to meet water quality standards.

VII. COMPLIANCE DETERMINATION

Compliance with the effluent limitations contained in section IV of this Order will be determined as specified below:

A. General

Compliance with effluent limitations for priority pollutants shall be determined using sample reporting protocols defined in the Monitoring and Reporting Program (Attachment E) and Fact Sheet Section VI. For purposes of reporting and administrative enforcement, the Discharger shall be deemed out of compliance with single-sample effluent limitations if the concentration of the pollutant in the monitoring sample is greater than the effluent limitation. For averaged or median-based effluent limitations, the Discharger shall be deemed out of compliance if the average or median concentration in the data set is greater than the effluent limitation.

B. Multiple Sample Data

When determining compliance with a pollutant limit and more than one sample result is available, the Discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of “Detected, but Not Quantified” (DNQ) or “Not Detected” (ND). In those cases, the Discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:

1. The data set shall be ranked from low to high, ranking the reported ND determinations lowest, DNQ determinations next, followed by quantified values (if any). The order of the individual ND or DNQ determinations is unimportant.

2. The median value of the data set shall be determined. If the data set has an odd number of data points, then the median is the middle value. If the data set has an even number of data points, then the median is the average of the two values around the middle, unless one or both of these points are ND or DNQ, in which case the median value shall be the lower of the two data points, where DNQ is lower than a value, and ND is lower than DNQ.

ATTACHMENT A – DEFINITIONS

Acute Toxicity

a. Acute Toxicity (TUa)

Expressed in Toxic Units Acute (TUa)

$$TUa = \frac{100}{96\text{-hr LC } 50\%}$$

b. Lethal Concentration 50% (LC 50)

LC 50 (percent waste giving 50% survival of test organisms) shall be determined by static or continuous flow bioassay techniques using standard marine test species as specified in Ocean Plan Appendix III. If specific identifiable substances in wastewater can be demonstrated by the discharger as being rapidly rendered harmless upon discharge to the marine environment, but not as a result of dilution, the LC 50 may be determined after the test samples are adjusted to remove the influence of those substances.

When it is not possible to measure the 96-hour LC 50 due to greater than 50 percent survival of the test species in 100 percent waste, the toxicity concentration shall be calculated by the expression:

$$TUa = \frac{\log (100 - S)}{1.7}$$

where:

S = percentage survival in 100% waste. If S > 99, TUa shall be reported as zero.

Areas of Special Biological Significance (ASBS)
Those areas designated by the State Water Board as ocean areas requiring protection of species or biological communities to the extent that alteration of natural water quality is undesirable. All Areas of Special Biological Significance are also classified as a subset of STATE WATER QUALITY PROTECTION AREAS.

Average Dry Weather Discharge
The average dry weather discharge is the average discharge rate over three consecutive months of dry weather (i.e., a wet weather day has not occurred)

Average Monthly Effluent Limitation (AMEL)
The highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.

Average Weekly Effluent Limitation (AWEL)
The highest allowable average of daily discharges over a calendar week (Sunday through Saturday), calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week.

Chlordane
Shall mean the sum of chlordane-alpha, chlordane-gamma, chlordene-alpha, chlordene-gamma, nonachlor-alpha, nonachlor-gamma, and oxychlordane.

Chronic Toxicity
This parameter shall be used to measure the acceptability of waters for supporting a healthy marine biota until improved methods are developed to evaluate biological response.

a. Chronic Toxicity (TUc)

Expressed as Toxic Units Chronic (TUc)

$$TUc = \frac{100}{NOEL}$$

b. No Observed Effect Level (NOEL)

The NOEL is expressed as the maximum percent effluent or receiving water that causes no observable effect on a test organism, as determined by the result of a critical life stage toxicity test listed in Ocean Plan Appendix III.

Combined Sewer System
A combined sewer system (CSS) is a wastewater collection system owned by a State or municipality which conveys sanitary wastewaters (domestic, commercial, and industrial wastewaters) and stormwater through a single-pipe system to a Publicly Owned Treatment Works (POTW) Treatment Plant.

Combined Sewer Overflow
A combined sewer overflow (CSO) is the discharge from a combined sewer system at a point prior to the POTW Treatment Plant.

Combined Sewer Overflow Discharge
A combined sewer discharge (CSOD) is an authorized, treated discharge from the near-shore discharge structures, offshore discharge structures, or treatment facilities during a wet weather day.

Daily Discharge
Daily Discharge is defined as either: (1) the total mass of the constituent discharged over the calendar day (12:00 am through 11:59 pm) or any 24-hour period that reasonably represents a calendar day for purposes of sampling (as specified in the permit), for a constituent with limitations expressed in units of mass or; (2) the unweighted arithmetic mean measurement of the constituent over the day for a constituent with limitations expressed in other units of measurement (e.g., concentration).

The daily discharge may be determined by the analytical results of a composite sample taken over the course of one day (a calendar day or other 24-hour period defined as a day) or by the arithmetic mean of analytical results from one or more grab samples taken over the course of the day.

For composite sampling, if 1 day is defined as a 24-hour period other than a calendar day, the analytical result for the 24-hour period will be considered as the result for the calendar day in which the 24-hour period ends.

DDT
Shall mean the sum of 4,4'DDT, 2,4'DDT, 4,4'DDE, 2,4'DDE, 4,4'DDD, and 2,4'DDD.

Degrade
Degradation shall be determined by comparison of the waste field and reference site(s) for characteristic species diversity, population density, contamination, growth anomalies, debility, or supplanting of normal species by undesirable plant and animal species. Degradation occurs if there are significant differences in any of three major biotic groups, namely, demersal fish, benthic invertebrates, or attached algae. Other groups may be evaluated where benthic species are not affected, or are not the only ones affected.

Detected, but Not Quantified (DNQ)
Sample results that are less than the reported Minimum Level, but greater than or equal to the laboratory's MDL.

Dichlorobenzenes
Shall mean the sum of 1,2- and 1,3-dichlorobenzene.

Downstream Ocean Waters
Waters downstream with respect to ocean currents.

Dredged Material
Any material excavated or dredged from the navigable waters of the United States, including material otherwise referred to as "spoil".

Dry Weather Day
Any day that is not a wet weather day. During dry weather, all wastewater collected is treated to secondary levels at the Plant and discharged at Discharge Point 001.

Enclosed Bays
Indentations along the coast that enclose an area of oceanic water within distinct headlands or harbor works. Enclosed bays include all bays where the narrowest distance between headlands or outermost harbor works is less than 75 percent of the greatest dimension of the enclosed portion of the bay. This definition includes but is not limited to: Humboldt Bay, Bodega Harbor, Tomales Bay, Drakes Estero, San Francisco Bay, Morro Bay, Los Angeles Harbor, Upper and Lower Newport Bay, Mission Bay, and San Diego Bay.

Endosulfan
The sum of endosulfan-alpha and -beta and endosulfan sulfate.

Estuaries and Coastal Lagoons are waters at the mouths of streams that serve as mixing zones for fresh and ocean waters during a major portion of the year. Mouths of streams that are temporarily separated from the ocean by sandbars shall be considered as estuaries. Estuarine waters will generally be considered to extend from a bay or the open ocean to the upstream limit of tidal action but may be considered to extend seaward if significant mixing of fresh and salt water occurs in the open coastal waters. The waters described by this definition include but are not limited to the Sacramento-San Joaquin Delta as defined by Section 12220 of the California Water Code, Suisun Bay, Carquinez Strait downstream to Carquinez Bridge, and appropriate areas of the Smith, Klamath, Mad, Eel, Noyo, and Russian Rivers.

Halomethanes shall mean the sum of bromoform, bromomethane (methyl bromide) and chloromethane (methyl chloride).

HCH shall mean the sum of the alpha, beta, gamma (lindane) and delta isomers of hexachlorocyclohexane.

Initial Dilution
The process that results in the rapid and irreversible turbulent mixing of wastewater with ocean water around the point of discharge.

For a submerged buoyant discharge, characteristic of most municipal and industrial wastes that are released from the submarine outfalls, the momentum of the discharge and its initial buoyancy act together to produce turbulent mixing. Initial dilution in this case is completed when the diluting wastewater ceases to rise in the water column and first begins to spread horizontally.

For shallow water submerged discharges, surface discharges, and non-buoyant discharges, characteristic of cooling water wastes and some individual discharges, turbulent mixing results primarily from the momentum of discharge. Initial dilution, in these cases, is considered to be completed when the momentum induced velocity of the discharge ceases to produce significant mixing of the waste, or the diluting plume reaches a fixed distance from the discharge to be specified by the Regional Water Board, whichever results in the lower estimate for initial dilution.

Instantaneous Maximum Effluent Limitation
The highest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous maximum limitation).

Instantaneous Minimum Effluent Limitation
The lowest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous minimum limitation).

Kelp Beds
For purposes of the bacteriological standards of the Ocean Plan, are significant aggregations of marine algae of the genera Macrocystis and Nereocystis. Kelp beds include the total foliage canopy of Macrocystis and Nereocystis plants throughout the water column.

Mariculture
The culture of plants and animals in marine waters independent of any pollution source.

Material
(a) In common usage: (1) the substance or substances of which a thing is made or composed (2) substantial; (b) For purposes of the Ocean Plan relating to waste disposal, dredging and the disposal of dredged material and fill, MATERIAL means matter of any kind or description which is subject to regulation as waste, or any material dredged from the navigable waters of the United States. See also, DREDGED MATERIAL.

Maximum Daily Effluent Limitation (MDEL)
The highest allowable daily discharge of a pollutant.

Method Detection Limit (MDL)
The minimum concentration of a substance that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero, as defined in title 40 of the Code of Federal Regulations, Part 136, Attachment B.

Minimum Level (ML)
The concentration at which the entire analytical system must give a recognizable signal and acceptable calibration point. The ML is the concentration in a sample that is equivalent to the concentration of the lowest calibration standard analyzed by a specific analytical procedure, assuming that all the method specified sample weights, volumes, and processing steps have been followed.

Natural Light
Reduction of natural light may be determined by the Regional Water Board by measurement of light transmissivity or total irradiance, or both, according to the monitoring needs of the Regional Water Board.

Not Detected (ND)
Those sample results less than the laboratory's MDL.

Ocean Waters
The territorial marine waters of the State as defined by California law to the extent these waters are outside of enclosed bays, estuaries, and coastal lagoons. If a discharge outside the territorial waters of the state could affect the quality of the waters of the State, the discharge may be regulated to assure no violation of the Ocean Plan will occur in ocean waters.

PAHs (polynuclear aromatic hydrocarbons)
The sum of acenaphthylene, anthracene, 1,2-benzanthracene, 3,4-benzofluoranthene, benzo[k]fluoranthene, 1,12-benzoperylene, benzo[a]pyrene, chrysene, dibenzo[ah]anthracene, fluorene, indeno[1,2,3-cd]pyrene, phenanthrene and pyrene.

PCBs (polychlorinated biphenyls)
The sum of chlorinated biphenyls whose analytical characteristics resemble those of Aroclor-1016, Aroclor-1221, Aroclor-1232, Aroclor-1242, Aroclor-1248, Aroclor-1254 and Aroclor-1260.

Pollutant Minimization Program (PMP)
PMP means waste minimization and pollution prevention actions that include, but are not limited to, product substitution, waste stream recycling, alternative waste management methods, and education of the public and businesses. The goal of the PMP shall be to reduce

all potential sources of pollutants of concern through pollutant minimization (control) strategies, including pollution prevention measures as appropriate, to maintain the effluent concentration at or below the water quality-based effluent limitation. Pollution prevention measures may be particularly appropriate for persistent bioaccumulative priority pollutants where there is evidence that beneficial uses are being impacted. The Regional Water Board may consider cost effectiveness when establishing the requirements of a PMP. The completion and implementation of a Pollution Prevention Plan, if required pursuant to Water Code section 13263.3(d), shall be considered to fulfill the PMP requirements.

Reported Minimum Level
The ML (and its associated analytical method) chosen by the Discharger for reporting and compliance determination from the MLs included in this Order. The MLs included in this Order correspond to approved analytical methods for reporting a sample result that are selected by the Regional Water Board either from Appendix II of the Ocean Plan in accordance with section III.C.5.a. of the Ocean Plan or established in accordance with section III.C.5.b. of the Ocean Plan. The ML is based on the proper application of method-based analytical procedures for sample preparation and the absence of any matrix interferences. Other factors may be applied to the ML depending on the specific sample preparation steps employed. For example, the treatment typically applied in cases where there are matrix-effects is to dilute the sample or sample aliquot by a factor of ten. In such cases, this additional factor must be applied to the ML in the computation of the reported ML.

Satellite Collection System
The portion, if any, of a sanitary sewer system owned or operated by a different public agency than the agency that owns and operates the wastewater treatment facility that a sanitary sewer system is tributary to.

Shellfish
Organisms identified by the California Department of Public Health as shellfish for public health purposes (i.e., mussels, clams and oysters).

Significant Difference
Defined as a statistically significant difference in the means of two distributions of sampling results at the 95 percent confidence level.

Six-Month Median Effluent Limitation
The highest allowable moving median of all daily discharges for any 180-day period.

State Water Quality Protection Areas
Non-terrestrial marine or estuarine areas designated to protect marine species or biological communities from an undesirable alteration in natural water quality. All AREAS OF SPECIAL BIOLOGICAL SIGNIFICANCE (ASBS) that were previously designated by the State Water Board in Resolution Numbers 74-28, 74-32, and 75-61 are now also classified as a subset of State Water Quality Protection Areas and require special protections afforded by the Ocean Plan.

TCDD Equivalents
In this Order, TCDD Equivalents means the sum of the concentrations of chlorinated dibenzodioxins and chlorinated dibenzofurans multiplied by their Toxicity Equivalency Factor

(TEF) and their Bioaccumulation Equivalency Factor (BEF). This is based on 40 CFR Part 132, Appendix F, Procedure 4, Tables 1 and 2.

$(TEC)_{TCDD}$= The sum of $(C)_x(TEF)_x(BEF)_x$

Where $(TEC)_{TCDD}$ = TCDD Equivalents concentration in effluent

$(C)_x$ = concentration of total congener x in effluent

$(TEF)_x$ =TCDD toxicity equivalency factor for congener x

$(BEF)_x$ = TCDD bioaccumulation equivalency factor for congener x

Toxicity Equivalency Factor and Bioaccumulative Equivalency Factors are listed in the table below.

Congener	Toxicity Equivalency Factor (TEF)	Bioaccumulation Equivalency Factors (BEF)
2,3,7,8-TCDD	1.0	1.0
1,2,3,7,8-Pe-CDD	0.5	0.9
1,2,3,4,7,8-HxCDD	0.1	0.3
1,2,3.6,7,8-HxCDD	0.1	0.1
1,2,3,7,8,9-HxCDD	0.1	0.1
1,2,3,4,6,7,8-HpCDD	0.01	0.05
OCDD	0.0003	0.01
2,3,7,8-TCDF	0.1	0.8
1,2,3,7,8-PeCDF	0.03	0.2
2,3,4,7,8-PeCDF	0.3	1.6
1,2,3,4,7,8-HxCDF	0.1	0.08
1,2,3,6,7,8-HxCDF	0.1	0.2
2,3,4,6,7,8-HxCDF	0.1	0.7
1,2,3,7,8,9-HxCDF	0.1	0.6
1,2,3,4,6,7,8-HpCDF	0.01	0.01
1,2,3,4,7,8,9-HpCDF	0.01	0.4
OCDF	0.0003	0.02

Toxicity Reduction Evaluation (TRE)
A study conducted in a step-wise process designed to identify the causative agents of effluent or ambient toxicity, isolate the sources of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in toxicity. The first steps of the TRE consist of the collection of data relevant to the toxicity, including additional toxicity testing, and an evaluation

of facility operations and maintenance practices, and best management practices. A Toxicity Identification Evaluation (TIE) may be required as part of the TRE, if appropriate. (A TIE is a set of procedures to identify the specific chemical(s) responsible for toxicity. These procedures are performed in three phases (characterization, identification, and confirmation) using aquatic organism toxicity tests.)

Waste
As used in the Ocean Plan, waste includes a discharger's total discharge, of whatever origin, i.e., gross, not net, discharge.

Water Reclamation
The treatment of wastewater to render it suitable for reuse, the transportation of treated wastewater to the place of use, and the actual use of treated wastewater for a direct beneficial use or controlled use that would not otherwise occur.

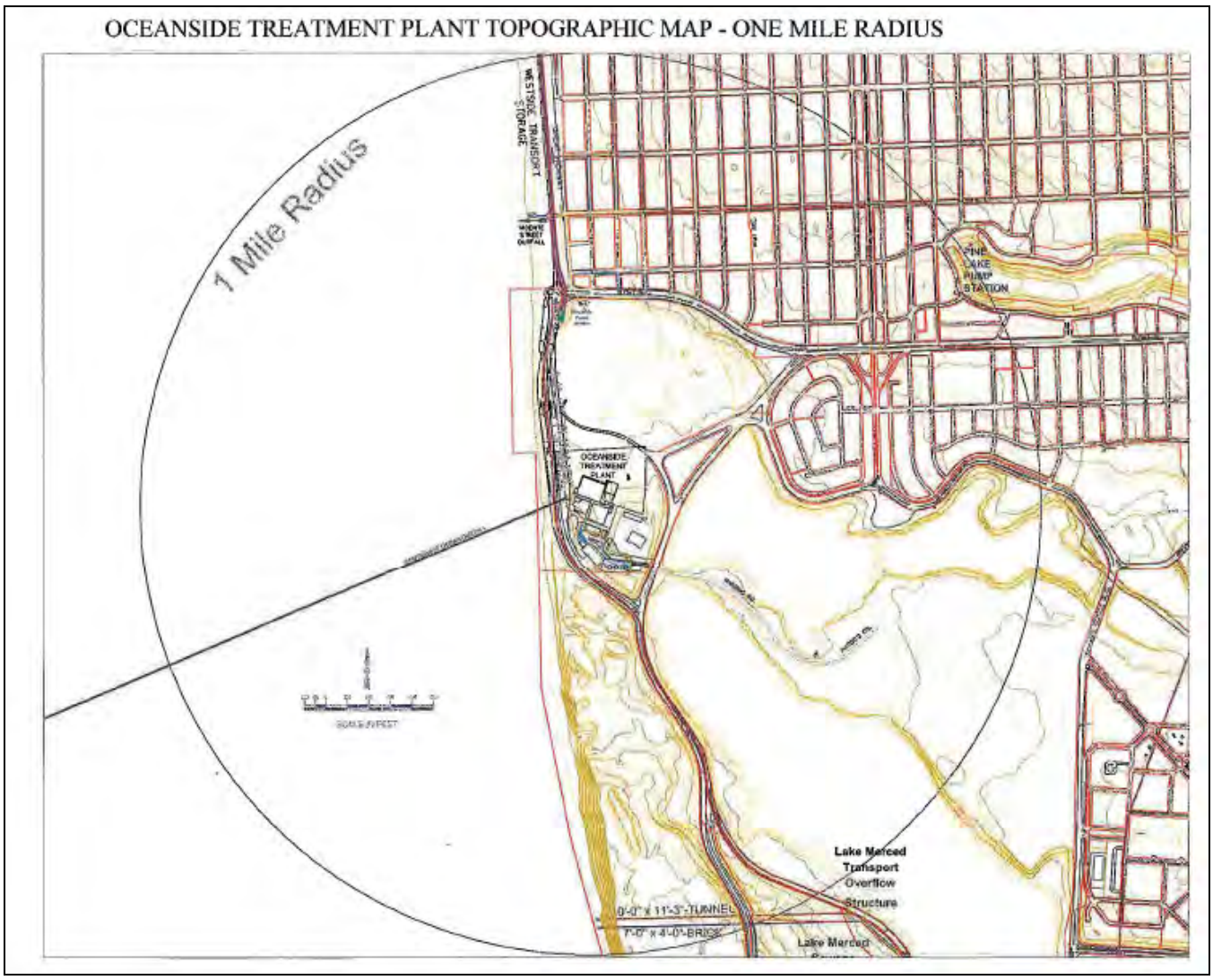
Wet Weather Day
A wet weather day is any day in which one of the following conditions exists as a result of rainfall:

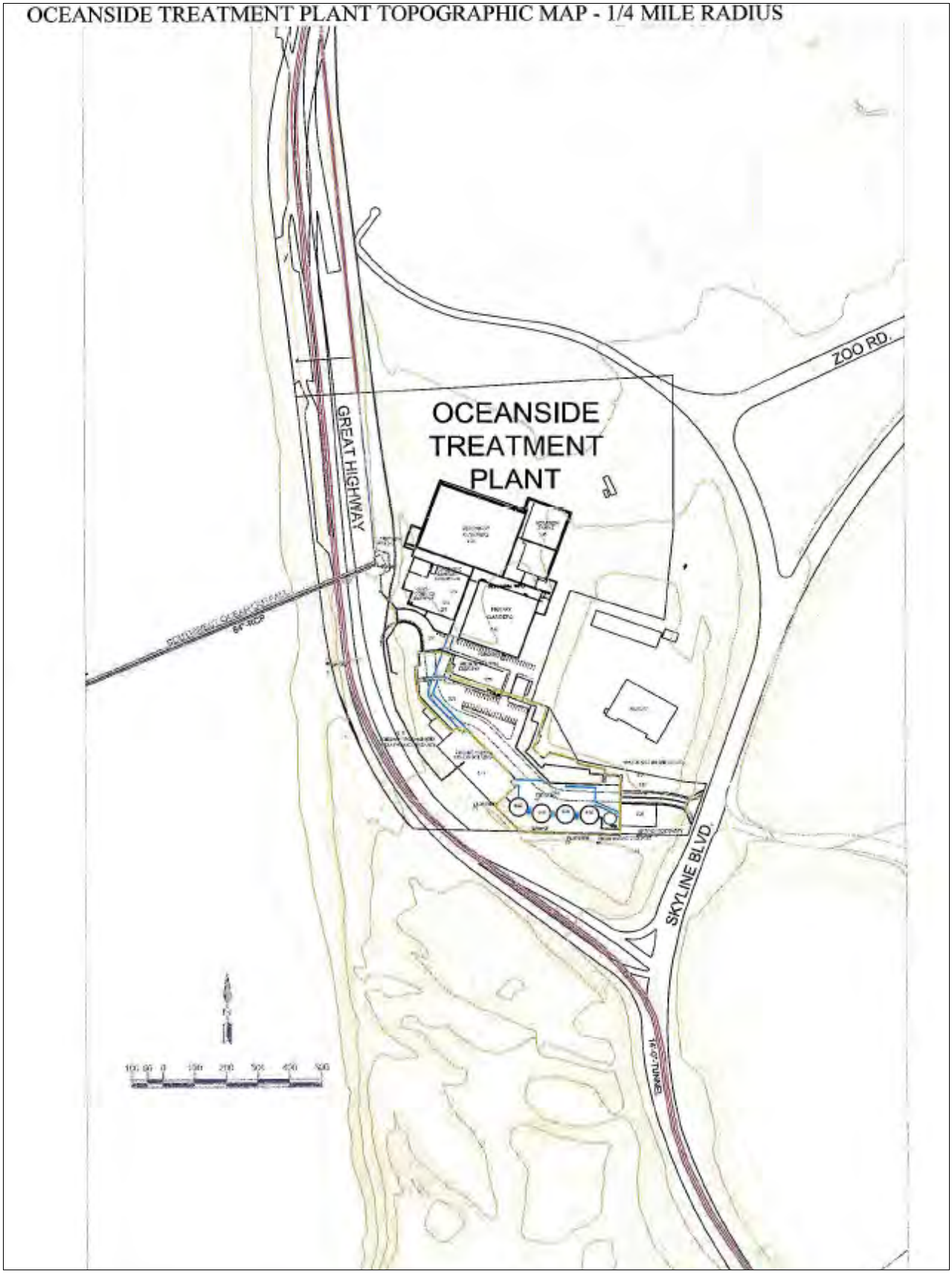
1. Instantaneous influent flow to the Plant exceed 43 MGD; or

2. The average daily influent flow concentration of TSS or BOD is less than 100 mg/L; or

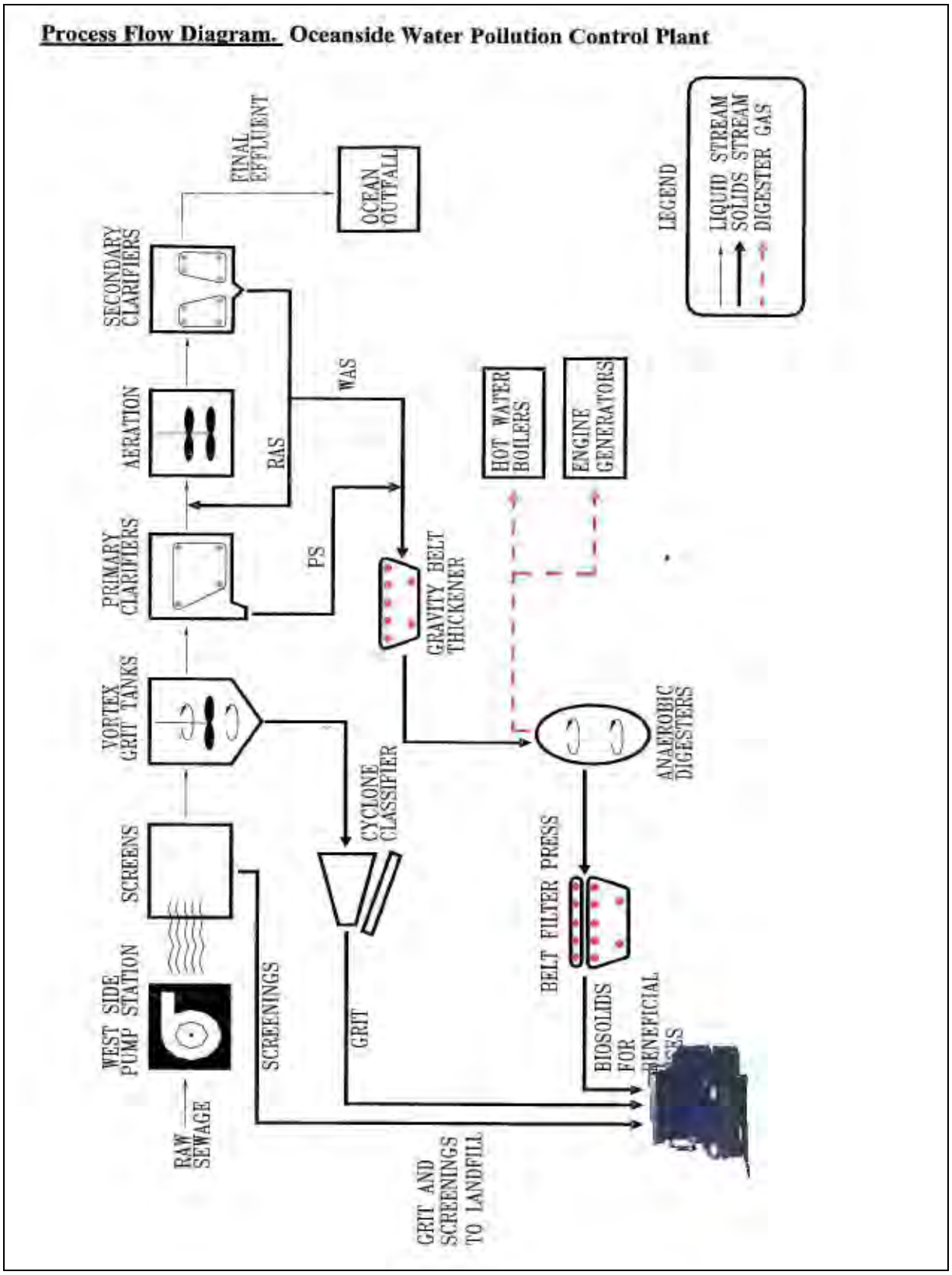
3. The Westside storage/transport flow elevation exceeds 0 feet in the West Box or 18 feet in the East Box. (Flow is decanted to the West Box from the East Box only when the East Box storage level exceeds 18 feet.)

ATTACHMENT B – MAP

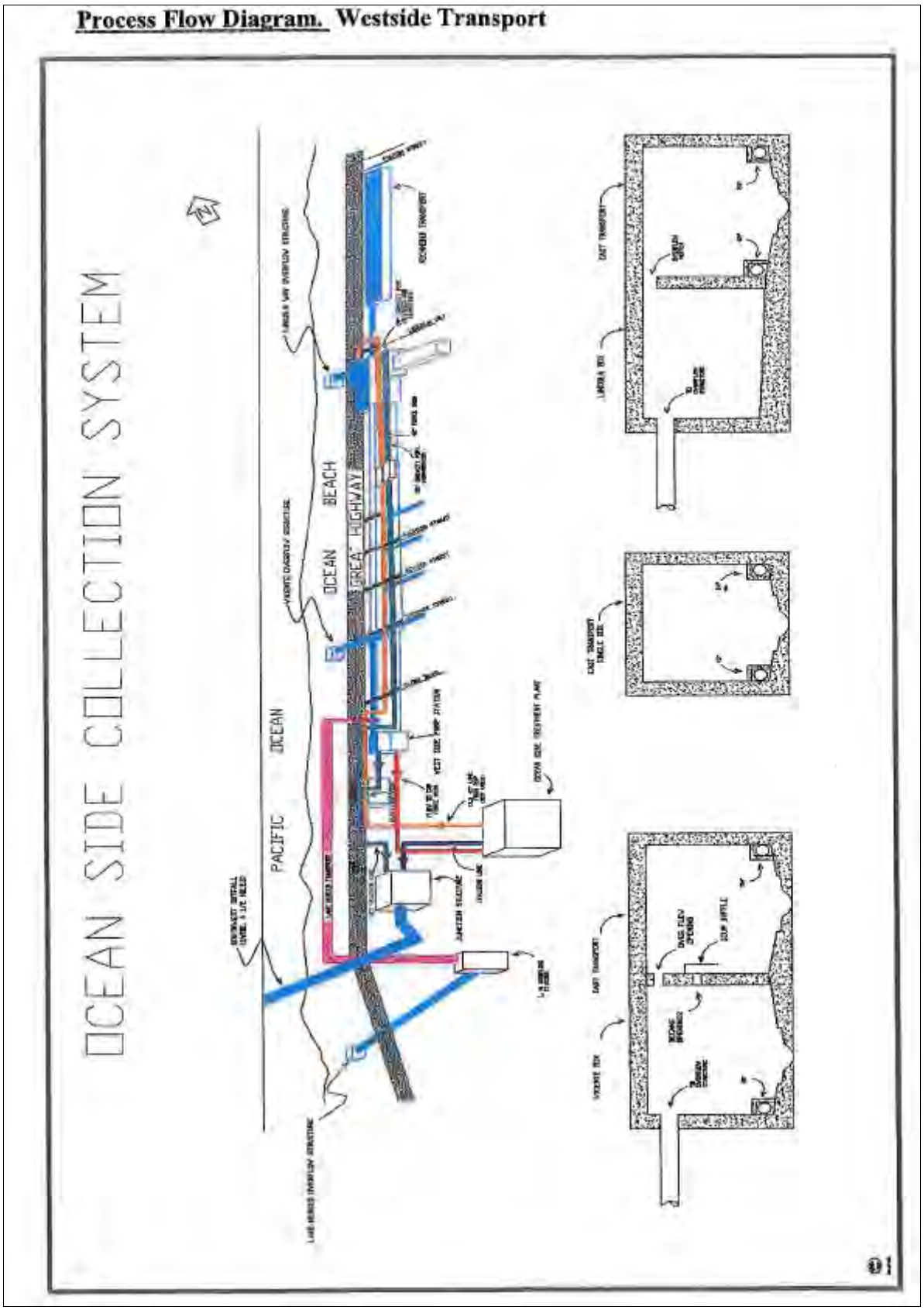



OCEANSIDE TREATMENT PLANT TOPOGRAPHIC MAP - 1/4 MILE RADIUS
OCEANSIDE
TREATMENT
PLANT
GREAT HIGHWAY
ZOO RD.
SKYLINE BLVD.

ATTACHMENT C – FLOW SCHEMATIC



Process Flow Diagram. Westside Transport



ATTACHMENT D – STANDARD PROVISIONS

I. STANDARD PROVISIONS – PERMIT COMPLIANCE

A. Duty to Comply

1. The Discharger must comply with all of the conditions of this Order. Any noncompliance constitutes a violation of the Clean Water Act (CWA) and the California Water Code and is grounds for enforcement action, for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application. (40 CFR §122.41(a).)

2. The Discharger shall comply with effluent standards or prohibitions established under Section 307(a) of the CWA for toxic pollutants and with standards for sewage sludge use or disposal established under Section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions, even if this Order has not yet been modified to incorporate the requirement. (40 CFR §122.41(a)(1).)

B. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for a Discharger in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this Order, 40 CFR §22.41(c).

C. Duty to Mitigate

The Discharger shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this Order that has a reasonable likelihood of adversely affecting human health or the environment, 40 CFR §122.41(d).

D. Proper Operation and Maintenance

The Discharger shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Discharger to achieve compliance with the conditions of this Order. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems that are installed by a Discharger only when necessary to achieve compliance with the conditions of this Order, 40 CFR §122.41(e).

E. Property Rights

1. This Order does not convey any property rights of any sort or any exclusive privileges. (40 CFR §122.41(g).)

2. The issuance of this Order does not authorize any injury to persons or property or invasion of other private rights, or any infringement of state or local law or regulations. (40 CFR §122.5(c).)

F. Inspection and Entry

The Discharger shall allow the Regional Water Board, State Water Board, United States Environmental Protection Agency (USEPA), and/or their authorized representatives (including an authorized contractor acting as their representative), upon the presentation of credentials and other documents, as may be required by law, to (40 CFR §122.41(i); Water. Code, §13383):

1. Enter upon the Discharger's premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this Order (40 CFR. § 122.41(i)(1));

2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order (40 CFR §122.41(i)(2));

3. Inspect and photograph, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order (40 CFR §122.41(i)(3)); and

4. Sample or monitor, at reasonable times, for the purposes of assuring Order compliance or as otherwise authorized by the CWA or the Water Code, any substances or parameters at any location. (40 CFR §122.41(i)(4).)

G. Bypass

1. Definitions

a. “Bypass” means the intentional diversion of waste streams from any portion of a treatment facility. (40 CFR §122.41(m)(1)(i).)

b. “Severe property damage” means substantial physical damage to property, damage to the treatment facilities, which causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production. (40 CFR §122.41(m)(1)(ii).)

2. Bypass not exceeding limitations. The Discharger may allow any bypass to occur which does not cause exceedances of effluent limitations, but only if it is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions listed in Standard Provisions – Permit Compliance I.G.3, I.G.4, and I.G.5 below. (40 CFR §122.41(m)(2).)

3. Prohibition of bypass. Bypass is prohibited, and the Regional Water Board may take enforcement action against a Discharger for bypass, unless (40 CFR §122.41(m)(4)(i)):

a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage (40 CFR §22.41(m)(4)(i)(A));

b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventive maintenance (40 CFR §122.41(m)(4)(i)(B)); and

c. The Discharger submitted notice to the Regional Water Board as required under Standard Provisions – Permit Compliance I.G.5 below. (40 CFR §122.41(m)(4)(i)(C).)

4. The Regional Water Board may approve an anticipated bypass, after considering its adverse effects, if the Regional Water Board determines that it will meet the three conditions listed in Standard Provisions – Permit Compliance I.G.3 above. (40 CFR §122.41(m)(4)(ii).)

5. Notice

a. Anticipated bypass. If the Discharger knows in advance of the need for a bypass, it shall submit a notice, if possible at least 10 days before the date of the bypass. (40 CFR §122.41(m)(3)(i).)

b. Unanticipated bypass. The Discharger shall submit notice of an unanticipated bypass as required in Standard Provisions - Reporting V.E below (24-hour notice). (40 CFR §122.41(m)(3)(ii).)

H. Upset

Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the Discharger. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation, 40 CFR §122.41(n)(1).

Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of Standard Provisions – Permit Compliance I.H.2 below are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review, 40 CFR §122.41(n)(2).

6. Conditions necessary for a demonstration of upset. A Discharger who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence that (40 CFR §122.41(n)(3)):

a. An upset occurred and that the Discharger can identify the cause(s) of the upset (40 CFR §122.41(n)(3)(i));

b. The permitted facility was, at the time, being properly operated (40 CFR §122.41(n)(3)(ii));

c. The Discharger submitted notice of the upset as required in Standard Provisions – Reporting V.E.2.b below (24-hour notice) (40 CFR §122.41(n)(3)(iii)); and

d. The Discharger complied with any remedial measures required under Standard Provisions – Permit Compliance I.C above,. 40 CFR §122.41(n)(3)(iv).

7. Burden of proof. In any enforcement proceeding, the Discharger seeking to establish the occurrence of an upset has the burden of proof. (40 CFR § 122.41(n)(4).)

II. STANDARD PROVISIONS – PERMIT ACTION

A. General

This Order may be modified, revoked and reissued, or terminated for cause. The filing of a request by the Discharger for modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any Order condition,. 40 CFR §122.41(f).

B. Duty to Reapply

If the Discharger wishes to continue an activity regulated by this Order after the expiration date of this Order, the Discharger must apply for and obtain a new permit,. 40 CFR §122.41(b).

C. Transfers

This Order is not transferable to any person except after notice to the Regional Water Board. The Regional Water Board may require modification or revocation and reissuance of the Order to change the name of the Discharger and incorporate such other requirements as may be necessary under the CWA and the Water Code, 40 CFR §122.41(l)(3); §122.61.

III. STANDARD PROVISIONS – MONITORING

A. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. (40 CFR §122.41(j)(1).)

B. Monitoring results must be conducted according to test procedures under Part 136 or, in the case of sludge use or disposal, approved under Part 136 unless otherwise specified in Part 503 unless other test procedures have been specified in this Order, 40 CFR §122.41(j)(4); §122.44(i)(1)(iv).

IV. STANDARD PROVISIONS – RECORDS

A. Except for records of monitoring information required by this Order related to the Discharger's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by Part 503), the Discharger shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the Regional Water Board Executive Officer at any time. (40 CFR §122.41(j)(2))

B. Records of monitoring information shall include:

1. The date, exact place, and time of sampling or measurements (40 CFR §122.41(j)(3)(i));

2. The individual(s) who performed the sampling or measurements (40 CFR §122.41(j)(3)(ii));

3. The date(s) analyses were performed (40 CFR §122.41(j)(3)(iii));

4. The individual(s) who performed the analyses (40 CFR §122.41(j)(3)(iv));

5. The analytical techniques or methods used (40 CFR §122.41(j)(3)(v)); and

6. The results of such analyses, 40 CFR §122.41(j)(3)(vi).

C. Claims of confidentiality for the following information will be denied (40 CFR § 122.7(b)):

1. The name and address of any permit applicant or Discharger (40 CFR §122.7(b)(1)); and

2. Permit applications and attachments, permits and effluent data. (40 CFR §122.7(b)(2).)

V. STANDARD PROVISIONS – REPORTING

A. Duty to Provide Information

The Discharger shall furnish to the Regional Water Board, State Water Board, or USEPA within a reasonable time, any information which the Regional Water Board, State Water Board, or USEPA may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order or to determine compliance with this Order. Upon request, the Discharger shall also furnish to the Regional Water Board, State Water Board, or USEPA copies of records required to be kept by this Order, 40 CFR §122.41(h); Water Code, §13267.

B. Signatory and Certification Requirements

1. All applications, reports, or information submitted to the Regional Water Board, State Water Board, and/or USEPA shall be signed and certified in accordance with Standard Provisions – Reporting V.B.2, V.B.3, V.B.4, and V.B.5 below. (40 CFR §122.41(k).)

2. All permit applications shall be signed by either a principal executive officer or ranking elected official. For purposes of this provision, a principal executive officer of a federal agency includes: (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of USEPA). (40 CFR §122.22(a)(3).).

3. All reports required by this Order and other information requested by the Regional Water Board, State Water Board, or USEPA shall be signed by a person described in Standard Provisions – Reporting V.B.2 above, or by a duly authorized representative of that person. A person is a duly authorized representative only if:

a. The authorization is made in writing by a person described in Standard Provisions – Reporting V.B.2 above (40 CFR §122.22(b)(1));

b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.) (40 CFR §122.22(b)(2)); and

c. The written authorization is submitted to the Regional Water Board and State Water Board. (40 CFR §122.22(b)(3).)

4. If an authorization under Standard Provisions – Reporting V.B.3 above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Standard Provisions – Reporting V.B.3 above must be submitted to the Regional Water Board and State Water Board prior to or together with any reports, information, or applications, to be signed by an authorized representative. (40 CFR §122.22(c).)

5. Any person signing a document under Standard Provisions – Reporting V.B.2 or V.B.3 above shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware

that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations." (40 CFR §122.22(d).)

C. Monitoring Reports

1. Monitoring results shall be reported at the intervals specified in the Monitoring and Reporting Program (Attachment E) in this Order. (40 CFR §122.22(l)(4).)

2. Monitoring results must be reported on a Discharge Monitoring Report (DMR) form or forms provided or specified by the Regional Water Board or State Water Board for reporting results of monitoring of sludge use or disposal practices. (40 CFR §122.41(l)(4)(i).)

3. If the Discharger monitors any pollutant more frequently than required by this Order using test procedures approved under Part 136 or, in the case of sludge use or disposal, approved under Part 136 unless otherwise specified in Part 503, or as specified in this Order, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Regional Water Board. (40 CFR §122.41(l)(4)(ii).)

4. Calculations for all limitations, which require averaging of measurements, shall utilize an arithmetic mean unless otherwise specified in this Order. (40 CFR §122.41(l)(4)(iii).)

D. Compliance Schedules

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this Order, shall be submitted no later than 14 days following each schedule date, 40 CFR §122.41(l)(5).

E. Twenty-Four Hour Reporting

1. The Discharger shall report any noncompliance that may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the Discharger becomes aware of the circumstances. A written submission shall also be provided within five (5) days of the time the Discharger becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. (40 CFR §122.41(l)(6)(i).)

2. The following shall be included as information that must be reported within 24 hours under this paragraph (40 CFR §122.41(l)(6)(ii)):

a. Any unanticipated bypass that exceeds any effluent limitation in this Order. (40 CFR §122.41(l)(6)(ii)(A).)

b. Any upset that exceeds any effluent limitation in this Order. (40 CFR §122.41(l)(6)(ii)(B).)

3. The Regional Water Board may waive the above-required written report under this provision on a case-by-case basis if an oral report has been received within 24 hours. (40 CFR §122.41(l)(6)(iii).)

F. Planned Changes

The Discharger shall give notice to the Regional Water Board as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required under this provision only when (40 CFR § 122.41(l)(1)):

1. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in section 122.29(b) (40 CFR §122.41(l)(1)(i)); or

2. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are not subject to effluent limitations in this Order. (40 CFR §122.41(l)(1)(ii).)

3. The alteration or addition results in a significant change in the Discharger's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan. (40 CFR§ 122.41(l)(1)(iii).)

G. Anticipated Noncompliance

The Discharger shall give advance notice to the Regional Water Board or State Water Board of any planned changes in the permitted facility or activity that may result in noncompliance with General Order requirements, 40 CFR §122.41(l)(2).

H. Other Noncompliance

The Discharger shall report all instances of noncompliance not reported under Standard Provisions – Reporting V.C, V.D, and V.E above at the time monitoring reports are submitted. The reports shall contain the information listed in Standard Provision – Reporting V.E above, 40 CFR §122.41(l)(7).

I. Other Information

When the Discharger becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Regional Water Board, State Water Board, or USEPA, the Discharger shall promptly submit such facts or information, 40 CFR §122.41(l)(8).

VI. STANDARD PROVISIONS – ENFORCEMENT

The Regional Water Board is authorized to enforce the terms of this permit under several provisions of the Water Code, including, but not limited to, sections 13385, 13386, and 13387.

Additional Provisions – Notification Levels

A. Publicly-Owned Treatment Works (POTWs)

All POTWs shall provide adequate notice to the Regional Water Board of the following (40 CFR §122.42(b)):

1. Any new introduction of pollutants into the POTW from an indirect discharger that would be subject to sections 301 or 306 of the CWA if it were directly discharging those pollutants (40 CFR §122.42(b)(1)); and

2. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of adoption of the Order. (40 CFR §122.42(b)(2).)

3. Adequate notice shall include information on the quality and quantity of effluent introduced into the POTW as well as any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW. (40 CFR §122.42(b)(3).)

ATTACHMENT E – MONITORING AND REPORTING PROGRAM

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ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)

NPDES regulations at 40 CFR 122.48 require that all NPDES permits specify monitoring and reporting requirements. California Water Code (CWC) §13267 and §13383 authorize the Regional Water Quality Control Board (Regional Water Board) to require technical and monitoring reports. This MRP establishes monitoring and reporting requirements, that implement the federal and California regulations.

I. GENERAL MONITORING PROVISIONS

A. The Discharger shall comply with the MRP and *Regional Standard Provisions, and Monitoring and Reporting Requirements (Supplement to Attachment D) for NPDES Wastewater Discharge Permits*, July 2009 (**Attachment G**). The MRP may be amended by the Executive Officer pursuant to USEPA regulations 40 CFR122.62, 122.63, and 124.5. If any discrepancies exist between the MRP and the Regional Standard Provisions, the MRP prevails.

B. Sampling is required during the entire year when discharging. All analyses shall be conducted using current USEPA methods, or methods that have been approved by the USEPA Regional Administrator pursuant to 40 CFR 136.4 and 136.5, or if 40 CFR 136 methods are not available, equivalent methods that are commercially and reasonably available. Analytical methods shall provide sufficient quantification of sampling parameters and constituents to evaluate compliance with applicable effluent limits and to perform reasonable potential analyses. Equivalent methods shall be more sensitive than those specified in 40 CFR 136, shall be specified in the permit, and shall be approved for use by the Executive Officer following consultation with the State Water Quality Control Board's Quality Assurance Program.

C. For compliance and reasonable potential monitoring, analyses shall be conducted using commercially available and reasonably achievable detection levels that are lower than applicable water quality objectives or criteria, or the effluent limitations, whichever are lower. The objective is to provide quantification of constituents sufficient to allow evaluation of observed concentrations with respect to the Minimum Levels (MLs).

MLs are the concentrations at which the entire analytical system must give a recognizable signal and acceptable calibration point. The ML is the concentration in a sample that is equivalent to the concentration of the lowest calibration standard analyzed by a specific analytical procedure, assuming that all the method specified sample weights, volumes, and processing steps have been followed.

As shown in Table II-3 of Ocean Plan Appendix II, the test method the Discharger may use for compliance with mercury effluent limitations and reasonable potential monitoring is Cold Vapor Atomic Absorbance with a ML of 0.2 µg/L.

II. MONITORING LOCATIONS

The Discharger shall establish the following monitoring locations to demonstrate compliance with the effluent limitations, discharge specifications, and other requirements in this Order:

Table E-1. Monitoring Station Locations

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
--	INF-001	Formerly Sampling Station A-003. At any point in the facility headworks at which all waste tributary to the system is present and preceding any phase of treatment, and exclusive of any return flows or process side streams that would significantly impact the quantity or quality of the influent.
001	EFF-001	Formerly Sampling Station E-007. At any point in the sewerage system following all phases of treatment and prior to contact with the receiving water or any effluent from the Westside Wet Weather Facilities.
CSD-001 through CSD-007	EFF-CSD	A representative monitoring location for the Westside Wet Weather Facilities, previously identified as a point prior to discharge from the Vicente Box, where all waste tributary to the diversion structure is present and treatment is complete.
---	SRF-15 east	Near shore receiving water along Baker Beach, in the surf east of SRF-15
---	SRF-15	Near shore receiving water along Baker Beach, in the surf at the terminus of Lobos Creek
---	SRF-16	Near shore receiving water along Baker Beach, in the surf opposite the Sea Cliff 2 Pump Station
---	SRF-17	Near shore receiving water in the surf along China Beach opposite the Sea Cliff 1 Pump Station
---	SRF-18	Near shore receiving water along Ocean Beach, in the surf at the foot of Balboa Street
---	SRF-19	Near shore receiving water along Ocean Beach, in the surf at the foot of Lincoln Way, opposite the Lincoln Overflow Discharge Structure
---	SRF-20	Near shore receiving water along Ocean Beach, in the surf at the foot of Pacheco Street
---	SRF-21	Near shore receiving water along Ocean Beach, in the surf at the foot of Vicente Street, opposite the Vicente Overflow Discharge Structure
---	SRF-21.1	Near shore receiving water along Ocean Beach, in the surf at the foot of Sloat Blvd
---	SRF-22	Near shore receiving water along Ocean Beach, in the surf at Fort Funston, opposite the Lake Merced Overflow Discharge Structure.

III. INFLUENT MONITORING REQUIREMENTS

The Discharger shall monitor Plant influent at Monitoring Location INF-001 in accordance with the following table.

Table E-2. Influent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow rate [1]	MGD	Continuous	Daily	Meter
BOD_5[2]	mg/L	C-24	1/W	[3]
TSS[4]	mg/L	C-24	5/W	[3]
pH	Standard units	Grab	5/W	[3]

[1] For influent flows, the following shall be reported:

Daily: Total Daily Flow Volume (million gallons) plus total daily influent flow originating as effluent/decant from the Westside Transport

Monthly: Minimum, Average, and Maximum Daily Flow (MGD)

Monthly: Total Flow Volume (million gallons) plus total monthly influent flow originating as effluent/decant from the Westside Transport

[2] Biochemical Oxygen Demand

[3] Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136.

[4] Total Suspended Solids

IV. EFFLUENT MONITORING REQUIREMENTS

A. Monitoring Location EFF-001

The Discharger shall monitor effluent at Monitoring Location EFF-001 as follows.

Table E-3. Effluent Monitoring, Monitoring Location EFF-001

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Method
Flow rate [1]	MGD	Cont.	Daily	Meter
BOD_5	mg/L	C-24	1/W	[2]
TSS	mg/L	C-24	5/W	[2]
Grease and Oil [3]	mg/L	C-24	1/Q	[2]
Turbidity	NTU	C-24	1/Q	[2]
pH	Standard Units	Grab	5/W	[2]
Ammonia, total	mg/L N	C-24	1/Q	[2]
Chronic Toxicity [4]	TUc	C-24	1/Q	[2]
Mercury [5]	µg/L	C-24	1/M	[2]
TCDD Equivalents	µg/L	C-24	1/Y	[2]
Table B Inorganic Pollutants [6]	µg/L	C-24	1/Q	[2]
Remaining Table B Pollutants [7]	µg/L	C-24	1/Y	[2]

[1] For effluent flows, the following shall be reported:

Daily: Total Daily Flow Volume (million gallons)

Monthly: Minimum, Average, and Maximum Daily Flow (MGD)

Monthly: Total Flow Volume (million gallons)

(2) Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136. The methods shall meet the lowest minimum levels (MLs) specified in Ocean Plan Appendix II. Where no method is specified for a given pollutant, the method shall be approved by the Regional Water Board. For TCDD congeners, the Discharger shall use USEPA Method 1613 and the MLs shall be as given below. Estimated congener concentrations (below the ML) shall not be included when adding the congener concentrations to calculate TCDD equivalents.

Parameter	Minimum Level
2,3,7,8-TetraCDD	5 pg/L
1,2,3,7,8-PentaCDD	25 pg/L
1,2,3,4,7,8-HexaCDD	25 pg/L
1,2,3,6,7,8-HexaCDD	25 pg/L
1,2,3,7,8,9-HexaCDD	25 pg/L
1,2,3,4,6,7,8-HeptaCDD	25 pg/L
OctaCDD	50 pg/L
2,3,7,8-TetraCDF	5 pg/L
1,2,3,7,8-PentaCDF	25 pg/L
2,3,4,7,8-PentaCDF	25 pg/L
1,2,3,4,7,8-HexaCDF	25 pg/L
1,2,3,6,7,8-HexaCDF	25 pg/L
1,2,3,7,8,9-HexaCDF	25 pg/L
2,3,4,6,7,8-HexaCDF	25 pg/L
1,2,3,4,6,7,8-HeptaCDF	25 pg/L
1,2,3,4,7,8,9-HeptaCDF	25 pg/L
OctaCDF	50 pg/L

(3) Grease and oil samples shall consist of 3 grab samples taken at 8 hour intervals during the sample day, with each grab being collected in a glass container and analyzed separately. Results shall be expressed as a weighted average of the three results, based on the instantaneous flow rates at the time each sample was collected.

(4) Samples for whole effluent toxicity tests shall be collected coincident with routine composite effluent samples. Refer to Section V of this MRP for whole effluent toxicity testing requirements.

(5) The Discharger may, at its option, sample effluent mercury either as grab or as 24-hour composite samples.

(6) The Table B inorganic pollutants are those inorganic constituents listed in Ocean Plan Table B, excluding mercury.

(7) The remaining Table B pollutants are the pollutants listed in Ocean Plan Table B, excluding those pollutants with monitoring requirements established elsewhere in this table (i.e., inorganics, mercury, chronic toxicity, and radioactivity). Because effluent is not chlorinated, chlorine is also excluded.

B. Monitoring Locations EFF-CSD-0xx

1. During each CSOD occurrence, the Discharger shall monitor discharges at the appropriate Monitoring Location EFF-CSD-0xx in accordance with the following elements established by Table E-4. Monitoring is required only during discharge events, which may last for less than one hour or for more than one day. Composite sampling shall commence within one hour after a discharge begins or as soon as

reasonably practicable with due consideration for safety. and shall continue until the discharge stops; however, the compositing period shall not exceed 24 hours.

Table E-4. Effluent Monitoring, Monitoring Location EFF-CSD

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Method
Flow	MGD	Cont.	Continuous during discharge	Meter (1)
BOD_5	mg/L	C-X (2)	1/occurrence	(7)
Total Suspended Solids	mg/L	C-X (2)	1/occurrence	(7)
Ammonia	mg/L N	C-X (2)	1/occurrence	(7)
Grease and Oil	mg/L	C-X (2)	1/occurrence	(7)
pH	Std Units	C-X (2)	1/occurrence	(7)
Table B Inorganics (3)	µg/L	C-X (2)	1/occurrence	(7)
Pesticides and PCBs (4)	µg/L	C-X (2)	1/occurrence	(7)
PAHs (5)	µg/L	C-X (2)	1/occurrence	(7)
Remaining Table B Pollutants (6)	µg/L	C-X (2)	1/year	(7)

(1) Alternately, flow may be estimated using models.

(2) Composite sample of 1 grab sample per hour over X hours, where X = the duration of the discharge but not exceeding 24 hours

(3) The Table B inorganic pollutants are those inorganic constituents listed in Table B of the 2005 Ocean Plan - arsenic, cadmium, hexavalent chromium, copper, lead, mercury, nickel, selenium, silver, zinc, and cyanide.

(4) As identified in EPA Method 608,

(5) As identified by the Ocean Plan and by Attachment A of this Order (Definitions).

(6) The remaining Table B pollutants are those listed in Ocean Plan Table B, excluding those with monitoring requirements established elsewhere in this table, and radioactivity. These pollutants shall be monitored during a CSOD occurrence.

(7) Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136.

2. The Discharger shall record the following information for each combined sewer overflow discharge event from discharge points CSD-001, CSD-002, CSD-003, CSD-005, and CSD-007.

a. Date and time that CSOD started;

b. Frequency, duration, and volume of CSOD;

c. Rainfall intensity and amount (hourly data, aggregated);

d. Data to support discharge volume estimate (if estimated); and

e. Documentation of conformance with the Operation Plan for wet weather facilities.

V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

A. Chronic Toxicity Monitoring Requirements

1. *Sampling.* The Discharger shall collect 24-hour composite samples of the effluent for critical life stage toxicity testing as indicated below. For toxicity tests requiring renewals, 24-hour composite samples collected on consecutive days are required.

2. *Test Species.* The Discharger shall utilize the echinoderm embryo development test, with either the sand dollar (*Dendraster excentricus*) or the purple sea urchin (*Strongylocentrotus purpuratus*), such that the test species used is in gravid condition. The Discharger is required to re-screen for the most sensitive species once during the term of this permit and shall submit the chronic toxicity screening report to the Regional Water Board no later than 180 days prior to the Order expiration date with the application for permit reissuance.

3. *Methodology.* Sample collection, handling and preservation shall be in accordance with USEPA protocols. In addition, bioassays shall be conducted in compliance with the most recently promulgated test methods, as shown in **Appendix E-2**. These are "Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms," currently EPA/600/R-95/136, August 1995. Any methodology exceptions must be granted by the Executive Officer and the Environmental Laboratory Accreditation Program (ELAP).

4. *Dilution Series*. The Discharger shall conduct tests at the in-stream waste concentration (IWC), four concentrations bracketing the IWC, and a control.

B. Chronic Toxicity Reporting Requirements

1. Routine Reporting. Toxicity test results for the current reporting period shall include, at a minimum, for each test:

   (i) Sample date(s)

   (ii) Test initiation date

   (iii) Test species

   (iv) End point values for each dilution (e.g., number of young, growth rate, percent survival)

   (v) NOEC value(s) in percent effluent

   (vi) IC15, IC25, IC40, and IC50 values (or EC15, EC25 ... etc.) as percent effluent

   (vii) TUc values (100/NOEC)

(viii) Mean percent mortality (±s.d.) after 96 hours in 100% effluent (if applicable)

(ix) NOEC and LOEC values for reference toxicant test(s)

(x) IC50 or EC50 value(s) for reference toxicant test(s)

(xi) Available water quality measurements for each test (pH, D.O., temperature, conductivity, hardness, salinity, ammonia)

2. Compliance Summary. The results of the chronic toxicity testing shall be provided in the self-monitoring report and shall include a summary table of chronic toxicity data from at least eleven of the most recent samples. The information in the table shall include items listed above under 1 specifically item numbers (i), (iii), (v), (vi) (IC25 or EC25) and (vii).

C. Quality Assurance

1. Concurrent testing with reference toxicants shall be conducted.

2. If either the reference toxicant test or effluent test does not meet all test acceptability criteria as specified in the test method manual, then the Discharger must re-sample and re-test at the earliest time possible.

3. Control and dilution water should be obtained from an unaffected area of the receiving water. If the dilution water used is different from the culture water, a second control using culture water should be used. If it is not practicable to collect samples from the unaffected area of the receiving water then a laboratory prepared control and dilution water should be used.

4. If the effluent sample is significantly different from the control sample, and the minimum significant difference (% MSD) is less than 5%, the Discharger at its option may exclude this result and re-test. If control sample variability in the effluent test exceeds the upper limit of 20% MSD which is the same as the reference toxicant, the Discharger shall re-sample and re-test as soon as possible.

D. Toxicity Reduction Evaluation (TRE)

If monitoring shows a violation of the chronic toxicity effluent limitation, the Discharger shall conduct a TRE and take all reasonable steps to reduce toxicity once the source of toxicity is identified. The Discharger shall initiate a TRE in accordance with the following:

1. ,To be ready to respond to a toxicity event the Discharger shall prepare a generic TRE work plan within 90 days of the effective date of this Order and update it as necessary.

2. Within 60 days of exceeding the effluent limitation for chronic toxicity, the Discharger shall submit to USEPA a TRE work plan that should be the generic work plan revised for this toxicity event after considering discharge data.

3. Within 30 days of the date of completion of the accelerated monitoring tests observed to exceed the effluent limitation, the Discharger shall initiate a TRE in accordance with a TRE work plan that incorporates any and all comments from USEPA. Accelerated monitoring can be achieved by the Discharger conducting six additional toxicity tests using the same species and test method, approximately every two weeks, over a 12 week period. This testing shall begin within 145 days of receipt of test results exceeding the toxicity effluent limit. If none of the additional tests exceed the toxicity limitation, then the Discharger may return to the regular testing frequency.

4. The TRE shall be specific to the discharge and be prepared in accordance with current technical guidance and reference materials, including USEPA guidance materials. The TRE shall be conducted as a tiered evaluation process as summarized below:

a. Tier 1 consists of basic data collection (routine and accelerated monitoring).

b. Tier 2 consists of evaluation of optimization of the treatment process, including operation practices and in-plant process chemicals.

c. Tier 3 consists of a toxicity identification evaluation (TIE).

d. Tier 4 consists of evaluation of options for additional wastewater treatment processes.

e. Tier 5 consists of evaluation of options for modifications of in-plant treatment processes.

f. Tier 6 consists of implementation of selected toxicity control measures, and follow- up monitoring and confirmation of implementation success.

5. The TRE may be ended at any stage if monitoring finds there is no longer consistent toxicity (complying with requirements of Section VI.C.2.a of this Order).

6. The objective of a TIE shall be to identify the substance or combination of substances causing the observed toxicity. All reasonable efforts using currently available TIE methodologies shall be employed.

7. As toxic substances are identified or characterized, the Discharger shall continue the TRE by determining the sources and evaluating alternative strategies for reducing or eliminating the substances from the discharge. All reasonable steps shall be taken to reduce toxicity to levels consistent with the toxicity effluent limitations.

8. Many recommended TRE elements parallel required or recommended efforts of source control, pollution prevention, and stormwater control programs. TRE efforts

should be coordinated with such efforts. To prevent duplication of efforts, evidence of complying with requirements or recommended efforts of such programs may be acceptable to comply with TRE requirements.

9. Chronic toxicity may be episodic and identification of causes of, and reduction of sources of, toxicity may not be successful in all cases. Enforcement action will be based in part on the Discharger's responses and efforts to identify and control or reduce sources of consistent toxicity.

VI. LAND DISCHARGE MONITORING REQUIREMENTS

Not Applicable.

VII. RECLAMATION MONITORING REQUIREMENTS

Not Applicable.

VIII. RECEIVING WATER MONITORING REQUIREMENTS

The Discharger shall conduct routine shoreline monitoring for bacteria at six monitoring locations from Baker Beach along the San Francisco County shoreline perimeter to Sloat Blvd. on Ocean Beach one day per week in accordance with the schedule established in Table E-5, below.

During CSOD events, the Discharger shall post the beach in the vicinity of the CSOD event and shall conduct shoreline monitoring for bacteria at monitoring locations in the vicinity of the CSOD event from Baker Beach along the San Francisco County shoreline perimeter to Fort Funston on Ocean Beach in accordance with the schedule established in Table E-5, below.

During CSOD events, shoreline monitoring shall be initiated as soon as reasonable, with due consideration for safety. (Darkness, tidal conditions and storm related wave activity may prevent samples from safely being collected immediately after initiation of a CSOD event.) Shoreline monitoring shall be conducted at those locations in closest proximity to the CSOD. Daily shoreline monitoring during and following CSOD events and beach posting shall continue until bacteria concentrations in the receiving water at those locations fall below single sample maximum limits.

Table E-5. Receiving Water Surf Monitoring Requirements

Routine Monitoring					
Monitoring Locations	**Bacteria Type**	**Units**	**Minimum Monitoring Frequency**	**Sample Type**	**Analytical Method**
SRF-15 east SRF-15 SRF-17 SRF-18 SRF-19 SRF-21.1	Total Coliform *E. coli* Enterococcus	MPN/100 mLs	Once / week (1)	Grab	Quanti-Tray Method - Colilert 18™ Medium (total coliform and *E. coli*), Enterolert™ Medium (enterococcus)
CSOD Event Monitoring(1)					
SRF-15 east SRF-15 SRF-16 SRF-17 SRF-18 SRF-19 SRF-20 SRF-21 SRF-21.1 SRF-22	Total Coliform *E. coli* Enterococcus	MPN/100 mLs	Daily	Grab	Quanti-Tray Method - Colilert 18™ Medium (total coliform and *E. coli*), Enterolert™ Medium (enterococcus)

(1) Monitoring is only required at those locations in the vicinity of the CSOD.

IX. PRETREATMENT AND BIOSOLIDS MONITORING REQUIREMENTS

The Discharger shall comply with the pretreatment requirements specified in Table E-2 for influent (at Monitoring Location INF-001), effluent (at Monitoring Location EFF-001), and biosolids monitoring.

Table E-6. Pretreatment and Biosolids Monitoring Requirements

Constituents	**Influent INF-001**	**Effluent(3) EFF-001**	**Biosolids(4)**	**Sample Type**	
				INF-001 & EFF-001	**Biosolids(d)**
VOC	1/quarter	1/quarter	2/year	multiple grabs(5a)	grabs
BNA	1/quarter	1/quarter	2/year	multiple grabs(5a)	grabs
Metals(1)	1/month	1/month	2/year	24-hour composite(5b)	grabs
Hexavalent Chromium(2)	1/month	1/month	2/year	multiple grabs(5a)	grabs
Mercury	1/month	1/month	2/year	24-hour composite(5b,5c)	grabs
Cyanide	1/month	1/month	2/year	multiple grabs(5a)	grabs

Legends

VOC	= volatile organic compounds
BNA	= base/neutrals and acids extractable organic compounds
1/month	= once per month
1/quarter	= once per quarter
2/year	= twice per year

Footnotes:

(1) The parameters are arsenic, cadmium, copper, lead, nickel, silver, zinc, and selenium.

(2) The Discharger may elect to run total chromium instead of hexavalent chromium. Sample collection for total chromium measurements may also use 24-hour composite sampling.
(3) Effluent monitoring conducted in accordance with Table E-3 can be used to satisfy these pretreatment monitoring requirements.
(4) Since the Discharger operates its solar drying operations only during the dry season, the biosolids monitoring frequency is once per year during those times when it does not stockpile biosolids (i.e., the dry season). However, if and when the Discharger stockpiles biosolids (e.g., during wet weather), it shall report biosolids monitoring results for the stockpile during the wet season monitoring as well (i.e., twice per year).
(5) Sample types:
   a. Multiple grabs samples for VOC, BNA, hexavalent chromium, and cyanide, must be made up of a minimum of four (4) discrete grab samples, collected equally spaced over the course of a 24-hour period, with each grab analyzed separately and the results mathematically flow-weighted or with grab samples combined (volumetrically flow-weighted) prior to analysis.
   b. 24-hour composite sample may be made up discrete grab samples and may be combined (volumetrically flow-weighted) prior to analysis, or they should be mathematically flow-weighted. If automatic compositor is used, 24-hour composite samples must be obtained through flow-proportioned composite sampling.
   c. Automatic compositors are allowed for mercury if either 1) the compositing equipment (hoses and containers) comply with ultra-clean specifications, or 2) appropriate equipment blank samples demonstrate that the compositing equipment has not contaminated the sample. This direction is consistent with the Regional Water Board's October 22, 1999, letter on this subject.
   d. Biosolids collection should comply with those requirements specified in Attachment H, Appendix H-3 of this Order for sludge monitoring. The biosolids analyzed shall be a composite sample of the biosolids for final disposal. The Discharger shall also comply with biosolids monitoring requirements required by 40 CFR 503.

X. OTHER MONITORING REQUIREMENTS

1. **Off-Shore Monitoring Areas**. The Discharger shall continue to monitor the area outside San Francisco Bay between Rocky Point in Marin County and Point San Pedro in San Mateo County to identify any environmental effects of the discharge on receiving waters, sediment, or aquatic life.

2. Frequency of Sampling. The Discharger shall continue the Ocean Outfall Offshore Monitoring Program, sampling annually in the fall, when sediments are least disturbed.

3. **Specific Monitoring Points**. Monitoring locations are identified in Table E-6, below. (The Discharger selected locations using the USEPA's EMAP grid system, with 15 fixed locations and 36 random locations.)

Table E-7. Ocean Outfall Offshore Monitoring Locations

EMAP Station Number	Southwest Ocean Outfall (SWOO) Station Number	Latitude	Longitude
Fixed Locations			
1	---	37º 42' 12.00''	-122º 34' 31.20''
2	---	37º 42' 37.80''	-122º 34' 30.00''
4	---	37º 42' 42.00''	-122º 35' 42.00''
6	---	37º 40' 00.00''	-122º 32' 15.00''

25	---	37º 42’ 13.80’’	-122º 34’ 30.00’’
28	---	37º 41’ 54.00’’	-122º 34’ 28.80’’
31	---	37º 43’ 28.80’’	-122º 34’ 01.80’’
Random Locations			
R1	32	37º 52’ 04.77’’	-122º 38’ 28.60’’
R2	33	37º 51’ 06.14’’	-122º 36’ 00.87’’
R3	34	37º 51’ 04.65’’	-122º 38’ 50.77’’
R4	35	37º 50’ 53.96’’	-122º 40’ 45.11’’
R5	36	37º 50’ 15.84’’	-122º 37’ 12.27’’
R6	37	37º 50’ 11.61’’	-122º 35’ 41.45’’
R7	38	37º 49’ 40.86’’	-122º 39’ 18.05’’
R8	39	37º 49’ 19.20’’	-122º 41’ 25.50’’
R9	40	37º 48’ 31.68’’	-122º 37’ 29.76’’
R12	43	37º 47’ 07.88’’	-122º 36’ 57.88’’
R14	45	37º 46’ 29.37’’	-122º 38’ 38.38’’
R16	47	37º 45’ 39.83’’	-122º 37’ 04.52’’
R17	48	37º 45’ 33.87’’	-122º 38’ 55.98’’
R19	50	37º 45’ 00.01’’	-122º 39’ 56.01’’
R20	51	37º 44’ 46.38’’	-122º 35’ 55.51’’
R21	52	37º 43’ 43.07’’	-122º 31’ 11.61’’
R22	53	37º 43’ 04.34’’	-122º 38’ 42.51’’
R23	54	37º 42’ 59.44’’	-122º 32’ 47.41’’
R24	55	37º 42’ 56.50’’	-122º 34’ 15.08’’
R25	56	37º 42’ 41.24’’	-122º 36’ 28.29’’
R26	57	37º 42’ 33.84’’	-122º 31’ 08.82’’
R27	58	37º 42’ 15.49’’	-122º 34’ 55.24’’
R28	59	37º 41’ 35.66’’	-122º 32’ 11.82’’
R29	60	37º 41’ 20.89’’	-122º 36’ 06.47’’
R30	61	37º 40’ 55.35’’	-122º 33’ 29.05’’
R31	62	37º 40’ 56.18’’	-122º 37’ 43.15’’
R32	63	37º 39’ 31.65’’	-122º 33’ 41.41’’
R33	64	37º 39’ 14.63’’	-122º 32’ 04.75’’
R34	65	37º 38’ 02.91’’	-122º 32’ 27.99’’
R35	66	37º 37’ 42.23’’	-122º 36’ 40.08’’
R36	67	37º 37’ 34.73’’	-122º 33’ 53.51’’
R37	68	37º 37’ 00.97’’	-122º 36’ 55.75’’
R38	69	37º 36’ 52.15’’	-122º 35’ 28.81’’
R39	70	37º 36’ 32.16’’	-122º 32’ 01.35’’
R40	71	37º 36’ 16.73’’	-122º 33’ 03.03’’

4. **Sediment Sampling**. The Discharger shall collect benthic samples from seven historical fixed locations (1, 2, 4, 6, 25, 28, 31) to maintain time series data, and 30 out of the 36 random locations (R1- R9, R12, R16 – R17, R19 – R40), for a total of 45 samples. Samples shall be collected using a 0.1 m^2 Smith McIntyre grab sampler. Two grabs shall be collected at each station and the top 5 centimeters of sediment shall be composited from each grab prior to analysis. Analysis of the sediment samples shall include:

   - Total volatile solids
   - Total organic carbon
   - Kjeldahl nitrogen
   - Grain size
   - Inorganic toxic pollutants [Al, As, Cd, Cr, Cr(VI), Cu, Fe, Pb, Mn, Hg, Ni, Se, Ag, Zn] [The Discharger may elect to report total chromium in lieu of chromium (VI).].
   - DDT, PCBs, and PAHs

5. **Infaunal Sampling**. One benthic grab sample collected from each of the above locations shall be analyzed for infaunal organisms. This sample shall be passed through a 1.0 mm and a 0.5 mm sieve. Organisms retained on each sieve shall be relaxed and preserved for later enumeration and taxonomic determination to the lowest taxon.

6. **Trawls***.* The Discharger shall conducts trawls once per year in the fall to assess the presence or absence of demersal fish and epibenthic invertebrates in the vicinity of the ocean outfall, and to determine any bioaccumulation of priority pollutants in these organisms.

   A fish community analysis shall be conducted at a minimum of one of four fixed sampling locations (SWOO 1, 2, 25, or 28) and at one reference location outside of the influence of the discharge. Fish and invertebrates shall be collected, identified to the lowest identifiable taxon, and enumerated. The following information shall be recorded.

   - Fish
     - Abnormalities and disease symptoms, such as fin erosion, lesions, or tumors
     - Standard length of all fish specimens; disk width for skates and rays

   - Invertebrates
     - Carapace length and identification of unsexed or gravid females of shrimp
     - Carapace width and sex of crabs

   Tissue samples to assess the bioaccumulation of pollutants shall be composite samples collected at one of four fixed sampling locations (SWOO 1, 2, 25, 28) and at one or more reference locations outside of the influence of the discharge. Three composite samples shall be collected of one fish species and one macroinvertebrate species at each location. Each composite sample shall consist of ten or more organisms of each species, with the preferred species being English sole (*Pleuronectes vetulus)* and dungeness crab (*Cancer magister).* Muscle and liver/hepatopancreas tissues shall be

analyzed for inorganic pollutants (As, Cd, Cr, Cu, Pb, Hg, Se, Ag, and Zn), and DDT, PCBs, and PAHs.

7. **Adaptive Management**. The Discharger shall confer with USEPA and the Regional Water Board regarding any proposed changes to the monitoring program in response to ongoing analyses of monitoring data to maximize the amount of relevant and useful data that can be collected within the five year permit term.

8. **Reporting**. All offshore monitoring data shall be reported to USEPA and the Regional Water Board in an Annual Report submitted by August 30 of the year following sampling to allow for time to make modifications, if necessary, for the following sampling event. The report shall include raw data tables and summaries for each monitoring component. A comprehensive cumulative summary report shall be submitted with the next application for permit reissuance.

XI. REPORTING REQUIREMENTS

A. General Monitoring and Reporting Requirements

The Discharger shall comply with all Standard Provisions (Attachment D) and Regional Standard Provisions, and Monitoring Requirements (Attachment G) related to monitoring, reporting, and recordkeeping.

B. Self Monitoring Reports (SMRs)

1. At any time during the term of this permit, the State or Regional Water Board may notify the Discharger to electronically submit Self-Monitoring Reports (SMRs) using the State Water Board's California Integrated Water Quality System (CIWQS) Program Web site (http://www.waterboards.ca.gov/ciwqs/index.html) or to any other Internet web site specified by the Regional Water Board or USEPA. Until such notification is given, the Discharger shall submit paper copy SMRs. The CIWQS Web site will provide additional directions for SMR submittal in the event there will be service interruption for electronic submittal.

2. The Discharger shall submit monthly SMRs including the results of all required monitoring using USEPA-approved test methods or other test methods specified in this Order for each calendar month. Monthly SMRs shall be due on the 30th day following the end of each calendar month, covering samples collected during that calendar month; Annual Reports shall be due on February 1 following each calendar year.

3. The Discharger shall comply with the following schedule of monitoring periods and reporting.

Table E-8. Monitoring Periods

Sampling Frequency	Monitoring Period Begins On…	Monitoring Period
Continuous	Day after permit effective date	All
Cont./D	Day after permit effective date	All
Daily	Day after permit effective date	(Midnight through 11:59 PM) or any 24-hour period that reasonably represents a calendar day for purposes of sampling.
Weekly	Sunday following permit effective date or on permit effective date if on a Sunday	Sunday through Saturday
5/Week	Sunday following permit effective date or on permit effective date if on a Sunday	Sunday through Saturday
Monthly	First day of calendar month following permit effective date or on permit effective date if that date is first day of the month	1st day of calendar month through last day of calendar month
2/Month	First day of calendar month following permit effective date or on permit effective date if that date is first date of the month	1st day of calendar month through last day of calendar month
Quarterly	Closest of January 1, April 1, July 1, or October 1 following (or on) permit effective date	January 1 through March 31 April 1 through June 30 July 1 through September 30 October 1 through December 31
Annually	January 1 following (or on) permit effective date	January 1 through December 31. July 1 through June 30 for shoreline CSD and other rainfall initiated data.
<X> / Discharge Event	As soon as possible after discharge begins	For the duration of the discharge event

4. The Discharger shall report with each sample result the applicable reported Minimum Level (ML) and the current Method Detection Limit (MDL) as determined by the procedure in Part 136.

The Discharger shall report the results of analytical determinations for the presence of chemical constituents in a sample using the following reporting protocols:

a. Sample results greater than or equal to the reported ML shall be reported as measured by the laboratory (i.e., the measured chemical concentration in the sample).

b. Sample results less than the ML, but greater than or equal to the laboratory's MDL, shall be reported as "Detected, but Not Quantified," or DNQ. The estimated chemical concentration of the sample shall also be reported.

For the purposes of data collection, the laboratory shall write the estimated chemical concentration next to DNQ as well as the words "Estimated

Concentration" (which may be shortened to "Est. Conc."). The laboratory may, if such information is available, include numeric estimates of the data quality for the reported result. Numeric estimates of data quality may be percent accuracy (± a percentage of the reported value), numerical ranges (low to high), or any other means considered appropriate by the laboratory.

c. Sample results less than the laboratory's MDL shall be reported as "Not Detected" or ND.

d. Dischargers are to instruct laboratories to establish calibration standards so that the ML (or its equivalent if there is differential treatment of samples relative to calibration standards) is the lowest calibration standard. At no time is the Discharger to use analytical data derived from extrapolation beyond the lowest point of the calibration curve except in reporting estimated sample results less than the RL, but greater than or equal to the laboratory MDL as stated in 4.b. above.

5. The Discharger shall comply with effluent limitations for reportable pollutants determined using sample reporting protocols defined above and in Attachment A of this Order. For purposes of reporting and administrative enforcement, the Discharger shall be deemed out of compliance with single-sample effluent limitations if the concentration of the reportable pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the ML. For averaged or median-based effluent limitations, the Discharger shall be deemed out of compliance if the average or median concentration in the data set is greater than the effluent limitation

6. The Discharger shall submit SMRs in accordance with the following requirements:

a. The Discharger shall arrange all reported data in a tabular format. The data shall be summarized to clearly illustrate whether the facility is operating in compliance with interim and/or final effluent limitations. The Discharger is not required to duplicate the submittal of data that is entered in a tabular format within CIWQS. When electronic submittal of data is required and CIWQS does not provide for entry into a tabular format within the system, the Discharger shall electronically submit the data in a tabular format as an attachment.

b. The Discharger shall attach a cover letter to the SMR. The information contained in the cover letter shall clearly identify violations of this Order; corrective actions taken or planned; and the proposed time schedule for corrective actions. Identified violations shall include the requirement violated and a description of the violation.

c. If the Discharger wishes to invalidate any measurement, the letter of transmittal shall include identification of the measurement suspected to be invalid and notification of intent to submit a formal request to invalidate the measurement , within 60 days. This request shall include the original measurement in question, the reason for invalidating the measurement, all relevant documentation that supports the invalidation (e.g., laboratory sheet, log entry, test results etc.), and discussion of the corrective actions taken or planned (with time schedule for

completion) to prevent recurrence of the sampling or measurement problem. The invalidation of a measurement by USEPA or Regional Water Board staff will be based solely on the documentation submitted at that time.

d. SMRs must be submitted to the Regional Water Board, signed and certified as required by the Standard Provisions (Attachment D), to the address listed below:

Executive Officer
California Regional Water Quality Control Board
San Francisco Region
1515 Clay Street, Suite 1400
Oakland, CA 94612
ATTN: NPDES Wastewater Division

C. Discharge Monitoring Reports (DMRs)

1. As described in Section X.B.1 above, at any time during the term of this permit, the State or Regional Water Board may notify the Discharger to electronically submit SMRs that will satisfy federal requirements for submittal of DMRs. Until such notification is given, the Discharger shall submit DMRs in accordance with the requirements described below.

2. DMRs must be signed and certified as required by the standard provisions (Attachment D). The Discharger shall submit the original DMR and one copy of the DMR to the address listed below:

STANDARD MAIL	FEDEX/UPS/ OTHER PRIVATE CARRIERS
State Water Resources Control Board Division of Water Quality c/o DMR Processing Center PO Box 100 Sacramento, CA 95812-1000	State Water Resources Control Board Division of Water Quality c/o DMR Processing Center 1001 I Street, 15th Floor Sacramento, CA 95814

3. All discharge monitoring results must be reported on the official USEPA pre-printed DMR forms (EPA Form 3320-1). Forms that are self-generated will not be accepted unless they follow the exact same format of EPA Form 3320-1.

APPENDIX E-1
CHRONIC TOXICITY
DEFINITION OF TERMS AND SCREENING PHASE REQUIREMENTS

I. Definition of Terms

A. No observed effect level (NOEL) for compliance determination is equal to IC_{25} or EC_{25}. If the IC_{25} or EC_{25} cannot be statistically determined, the NOEL shall be equal to the NOEC derived using hypothesis testing.

B. Effective concentration (EC) is a point estimate of the toxicant concentration that would cause an adverse effect on a quantal, "all or nothing," response (such as death, immobilization, or serious incapacitation) in a given percent of the test organisms. If the effect is death or immobility, the term lethal concentration (LC) may be used. EC values may be calculated using point estimation techniques such as probit, logit, and Spearman-Karber. EC_{25} is the concentration of toxicant (in percent effluent) that causes a response in 25 percent of the test organisms.

C. Inhibition concentration (IC) is a point estimate of the toxicant concentration that would cause a given percent reduction in a nonlethal, nonquantal biological measurement, such as growth. For example, an IC_{25} is the estimated concentration of toxicant that would cause a 25 percent reduction in average young per female or growth. IC values may be calculated using a linear interpolation method such as USEPA's Bootstrap Procedure.

D. No observed effect concentration (NOEC) is the highest tested concentration of an effluent or a toxicant at which no adverse effects are observed on the aquatic test organisms at a specific time of observation. It is determined using hypothesis testing.

II. Chronic Toxicity Screening Phase Requirements

A. The Discharger shall perform screening phase monitoring:

1. Subsequent to any significant change in the nature of the effluent discharged through changes in sources or treatment, except those changes resulting from reductions in pollutant concentrations attributable to source control efforts, and at least once during the Order term.

2. Screening phase monitoring data shall be included in the NPDES permit application for reissuance. The information shall be as recent as possible, but may be based on screening phase monitoring conducted within 5 years before the permit expiration date.

B. Design of the screening phase shall, at a minimum, consist of the following elements:

1. Use of test species specified in **Appendix E-2**, attached, and use of the protocols referenced in those tables, or as approved by the Executive Officer.

2. Two stages:

a. Stage 1 shall consist of a minimum of one battery of tests conducted concurrently. Selection of the type of test species and minimum number of tests shall be based on **Appendix E-2** (attached).

b. Stage 2 shall consist of a minimum of two test batteries conducted at a monthly frequency using the three most sensitive species based on the Stage 1 test results and as approved by the Executive Officer.

3. Appropriate controls.

4. Concurrent reference toxicant tests.

5. Dilution series should include the IWC, and four concentrations that bracket the IWC, or other concentrations approved by the Executive Officer.

C. The Discharger shall submit a screening phase proposal acceptable to the Regional Water Board. The proposal shall address each of the elements listed above. If within 30 days neither USEPA nor the Regional Water Board staff comments, the Discharger shall commence with screening phase monitoring.

APPENDIX E-2
SUMMARY OF TOXICITY TEST SPECIES REQUIREMENTS
Critical Life Stage Toxicity Tests for Marine and Estuarine Waters

Species	(Scientific Name)	Effect	Test Duration	Reference
Alga	*(Skeletonema costatum)* *(Thalassiosira pseudonana)*	Growth rate	4 days	1
Red alga	*(Champia parvula)*	Number of cystocarps	7–9 days	3
Giant kelp	*(Macrocystis pyrifera)*	Percent germination; germ tube length	48 hours	2
Abalone	*(Haliotis rufescens)*	Abnormal shell development	48 hours	2
Oyster Mussel	*(Crassostrea gigas)* *(Mytilus edulis)*	Abnormal shell development; percent survival	48 hours	2
Echinoderms - Urchins Sand dollar	*(Strongylocentrotus purpuratus, S. franciscanus)* *(Dendraster excentricus)*	Percent fertilization Development test	1 hour 72 hours	2
Shrimp	*(Mysidopsis bahia)*	Percent survival; growth	7 days	3
Shrimp	*(Holmesimysis costata)*	Percent survival; growth	7 days	2
Topsmelt	*(Atherinops affinis)*	Percent survival; growth	7 days	2
Silversides	*(Menidia beryllina)*	Larval growth rate; percent survival	7 days	3

Toxicity Test References:

1. American Society for Testing Materials (ASTM). 1990. Standard Guide for Conducting Static 96-Hour Toxicity Tests with Microalgae. Procedure E 1218-90. ASTM, Philadelphia, PA.
2. Short-term Methods for Estimating the Chronic Toxicity of Effluent and Receiving Waters to West Coast Marine and Estuarine Organisms. EPA/600/R-95/136. August 1995.
3. Short-term Methods for Estimating the Chronic Toxicity of Effluent and Receiving Waters to Marine and Estuarine Organisms. EPA/600/4-90/003. July 1994.

Toxicity Test Requirements for Stage One Screening Phase

Requirements	Receiving Water Characteristics		
	Discharges to Coast	Discharges to San Francisco Bay[2]	
	Ocean	Marine/Estuarine	Freshwater
Taxonomic diversity	1 plant 1 invertebrate 1 fish	1 plant 1 invertebrate 1 fish	1 plant 1 invertebrate 1 fish
Number of tests of each salinity type: Freshwater[1] Marine/Estuarine	0 4	1 or 2 3 or 4	3 0
Total number of tests	4	5	3

[1] The freshwater species may be substituted with marine species if:

(a) The salinity of the effluent is above 1 part per thousand (ppt) greater than 95 percent of the time, or

(b) The ionic strength (TDS or conductivity) of the effluent at the test concentration used to determine compliance is documented to be toxic to the test species.

[2] (a) Marine/Estuarine refers to receiving water salinities greater than 1 ppt at least 95 percent of the time during a normal water year.

(b) Fresh refers to receiving water with salinities less than 1 ppt at least 95 percent of the time during a normal water year.

ATTACHMENT F – FACT SHEET

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ATTACHMENT F – FACT SHEET

As described in section II of this Order, this Fact Sheet includes the legal requirements and technical rationale that serve as the basis for the requirements of this Order.

This Order has been prepared under a standardized format to accommodate a broad range of discharge requirements for dischargers in California. Only those sections or subsections of this Order that are specifically identified as "not applicable" have been determined to not apply to this discharger. Sections or subsections of this Order not specifically identified as "not applicable" are fully applicable to this discharger.

I. PERMIT INFORMATION

The following table summarizes administrative information related to the facility.

Table F-1. Facility Information

WDID	2 386009001
Discharger	City and County of San Francisco
Name of Facility	Oceanside Water Pollution Control Plant, and Collection System including the Westside Wet Weather Facilities
Facility Address	3500 Great Highway
	San Francisco, CA 94132
	San Francisco County
Facility Contact, Title and Phone	Tommy Moala, Assistant General Manager, Wastewater Enterprise (415) 554-2465
Authorized Person to Sign and Submit Reports	Arleen Navarret, Regulatory Manager, (415) 934-5731
Mailing Address	San Francisco Public Utilities Commission/Wastewater Enterprise 1155 Market St., 11th Floor, San Francisco CA 94103
Billing Address	Same as above
CIWQS Place ID	256498
CIWQS Party ID	39680
Billing Address	Same as above
Type of Facility	Publicly Owned Treatment Works
Major or Minor Facility	Major
Threat to Water Quality	2
Complexity	A
Pretreatment Program	Y
Receiving water	Pacific Ocean
Receiving Water Type	Main discharge starting at about 3.4 nautical miles from shore, CSO discharges at shoreline
Reclamation Requirements	NA
Facility Permitted Flow	43 million gallons per day (MGD), average dry weather
Facility Design Flow	Oceanside Plant 43 MGD, average dry weather design flow (providing secondary treatment) 65 MGD maximum wet weather design flow (providing secondary treatment for 43 MGD, and primary treatment for an additional 22 MGD)

	Westside Wet Weather Facilities Collection system flows greater than 65 MGD and less than 175 MGD receive the equivalent of wet weather primary treatment in the Westside Wet Weather Facilities (storage/transports) and are discharged at the Southwest Ocean Outfall. Flows greater than 175 MGD receive the equivalent of wet weather primary treatment in the Westside Wet Weather Facilities and are discharged at authorized combined sewer overflow discharge (CSOD) points.
Watershed	San Mateo Coastal
Receiving Water	Pacific Ocean
Receiving Water Type	Ocean waters

A. The City and County of San Francisco (hereinafter the Discharger) is the owner and operator of the Oceanside Water Pollution Control Plant (Plant) and Westside Wet Weather Facilities, a publicly owned treatments works (POTW). For the purposes of this Order, references to the "discharger" or "permittee" in applicable federal and State laws, regulations, plans, or policy are held to be equivalent to references to the Discharger herein.

B. The facility discharges wastewater to the Pacific Ocean, waters of the United States, and is currently regulated by Order No. R2-2003-0073, which was adopted on August 20, 2003, expiring on September 30, 2008.

C. On March 28, 2008, the Discharger filed a report of waste discharge and submitted an application for renewal of its Waste Discharge Requirements (WDRs) and National Pollutant Discharge Elimination System (NPDES) permit.

II. FACILITY DESCRIPTION

A. Description of Wastewater and Biosolids Treatment or Controls

The Discharger is the owner and operator of the Oceanside Plant and its associated collection system, a combined sewer system that includes the Westside Wet Weather Facilities. The collection system includes approximately 300 miles of sewer pipes on the west side watershed of the city that covers the areas of Richmond, Sunset, and Lake Merced as well as a small portion of Daly City. The system also includes four all weather pump stations, Seacliff #1, Seacliff #2, Pine Lake and Westside and two wet weather pump stations, Seacliff #3 and the Zoo Wet-Weather Lift Station. There are no satellite systems.

Treatment at the Oceanside Plant, which has a peak secondary treatment capacity of 43 MGD, includes coarse screening at the Westside Pump Station, fine screening and grit removal at the Plant headworks, primary sedimentation, activated sludge treatment by a pure oxygen process, and secondary clarification. Secondary treated wastewater is discharged to the Pacific Ocean, 3.4 to 3.6 nautical miles offshore, at Discharge Point 001 - the Southwest Ocean Outfall. These receiving waters are waters of the United States but are beyond the territorial waters of the State of California. During wet weather periods of high influent flow, the Oceanside Plant can provide primary treatment for an additional 22 MGD of influent flow, which, following treatment, is

blended with secondary treated wastewater (i.e., a total treatment capacity of 65 MGD) and discharged at Discharge Point 001.

The Discharger's collection system includes three large storage/transport structures – the Westside Transport, a 49.3 million gallon box-like structure located beneath the Great Highway; the Richmond Transport, a 12 million gallon structure located to the north; and the Lake Merced Transport, a 10 million gallon structure located to the south. The combined storage capacity of these "Westside Wet Weather Facilities" is 73.5 million gallons, which includes 2.2 million gallons of capacity within the sewer lines.

Collection system flows that exceed the Oceanside Plant's treatment capacity of 65 MGD, are stored in the Westside Wet Weather Facilities, which provide the equivalent of wet weather primary treatment through solids settling, skimming of floatable solids, and screening at pump stations. Combined wastewater from the storage/transport structures is pumped via the Westside Pump Station to Discharge Point 001, until the pumping capacity of the combined sewer system facilities to the outfall is reached at 175 MGD. Combined wastewater flows greater than 175 MGD also receive (the equivalent of wet weather primary treatment) treatment in the storage/transport structures but are discharged at the seven, near-shore combined sewer overflow discharge structures, authorized by this Order. These receiving waters are waters of the United States and territorial waters of the State of California. To be considered a discrete combined sewer overflow discharge event, the combined sewer overflow discharge must be separated by six hours in time from any other combined sewer overflow discharge. For the purposes of this permit, authorized treated combined sewer overflow discharges from the near-shore overflow discharge structures are referred to as combined sewer overflow discharges (CSODs). Unauthorized untreated combined sewer overflows from combined sewer systems are referred to as combined sewer overflows (CSOs).

Wastewater solids removed by settling in the Westside Wet Weather Facilities are flushed to the Plant when wet weather flows subside. Primary and secondary solids from the Plant are blended and thickened using gravity belt thickeners, anaerobically digested, dewatered, and beneficially re-used at permitted sites.

Attachment B provides a map of the area around the Plant. Attachment C provides a flow schematic of the Plant.

Based on 70 years of historical rainfall records, the Westside Wet Weather Facilities were designed to achieve a long term average of eight discrete CSOD events per year. State Water Board Order No. WQ 79-16 defines a discrete combined sewer overflow discharge event as one separated from any other combined sewer overflow discharge by at least six hours. CSOD information for the period of January 2007 through December 2007 is summarized in Table F- 2, below.

Table F-2. CSOD Summary 2007

Overflow Discharge Point	CSD-001	CSD-002	CSD-003	CSD-004	CSD-005	CSD-006	CSD-007
CSOD Structure Name	Lake Merced	Vicente St.	Lincoln Way	Mile Rock	Sea Cliff 1	Sea Cliff Sewer	Sea Cliff 2
Days with Rainfall	63	63	63	63	63	63	63
Discharge Events	2	2	2	NA	0	NA	1
Average Duration (hours)	1.64	1.71	2.19	NA	NA	NA	1.1
Average Volume/Event (million gallons.)	5.98	5.83	6.17	NA	NA	NA	7.11

B. Discharge Points and Receiving Waters

The locations of the discharge points and their receiving waters are listed in Table F-3, below.

Table F-3. Outfall Locations

Discharge Point	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
001	Secondary Treated Wastewater, Combined Primary and Secondary Treated Wastewater and Stormwater, and the equivalent of wet weather primary treated combined Wastewater and Stormwater decant flow from a combined sewer system.	37 º 42’ 18” N	122 º 34’ 39” W	Pacific Ocean
CSD-001	The equivalent of wet weather Primary Treated Combined Wastewater and Stormwater	37 º 42’ 55” N	122 º 30’ 16” W	Pacific Ocean (Fort Funston, Ocean Beach)
CSD-002	The equivalent of wet weather Primary Treated Combined Wastewater and Stormwater	37 º 44’ 16” N	122 º 30’ 29” W	Pacific Ocean (Vicente St., Ocean Beach)
CSD-003	The equivalent of wet weather Primary Treated Combined Wastewater and Stormwater	37 º 45’ 50” N	122 º 30’ 42” W	Pacific Ocean (Lincoln Way, Ocean Beach)
CSD-004	The equivalent of wet weather Primary Treated Combined Wastewater and Stormwater	37 º 47’ 5” N	122 º 30’ 37” W	Pacific Ocean (Mile Rock)

CSD-005	The equivalent of wet weather Primary Treated Combined Wastewater and Stormwater	37 º 47' 16" N	122 º 29' 30" W	Pacific Ocean (China Beach)
CSD-006	The equivalent of wet weather Primary Treated Combined Wastewater and Stormwater	37 º 47' 22" N	122 º 29' 16" W	Pacific Ocean (Baker Beach)
CSD-007	The equivalent of wet weather Primary Treated Combined Wastewater and Stormwater	37 º 47' 22" N	122 º 29' 13" W	Pacific Ocean (Baker Beach)

Discharge Point 001 is located beginning about 3.4 nautical miles offshore, beyond the three nautical mile limit of the State's territorial waters. CSOD outfalls are located in the nearshore waters of the San Mateo Coastal Watershed.

C. Summary of Existing Requirements and Self-Monitoring Report (SMR) Data

1. Effluent limitations contained in the existing Order for discharges from Discharge Point 001 (formerly Discharge Point 007) and representative monitoring data for Monitoring Location EFF-001 (formerly E-007) from the term of the previous permit are as follows:

Table F-4. Historic Effluent Limitations and Monitoring Data

Parameter	Unit	Effluent Limitation				Monitoring Data (From 12/03 to 12/07)		
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Maximum	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
BOD_5	mg/L	30	45	---	---	33	40	---
TSS	mg/L	30	45	---	---	19	30	
Grease and Oil	mg/L	25	40	---	75	9.7	9.7	9.7
Turbidity	NTU	75	100	225	---	11	25	38
pH	s.u.	Between 6 and 9 at all times			---	5.7 minimum 8.0 maximum		
Acute Toxicity	TUa	---	---	2.58	---	---	---	1.58
Chronic Toxicity	TUc	---	---	76	---	---	---	50

2. The previous permit contained weekly monitoring requirements for bacteria in the receiving water at several surf stations, and additional surf monitoring requirements for bacteria in response to CSOD events. Requirements of the previous permit included posting notices at beaches with elevated bacteria levels until monitoring indicated bacteria were below water quality objectives. The following table summarizes periods of elevated bacteria levels during the term of the previous permit.

Table F-5. Receiving Water Surf Monitoring Summary

Wet Weather Season	Rainfall (inches)	Number of Discrete[(1)] Combined Sewer Discharges	Total Number of Days Per Year One or More Beaches Were Posted for Elevated Bacteria Counts
2003-2004	18.77	8	33
2004-2005	26.2	12	31
2005-2006	31.83	13	53
2006-2007	14.76	3	12
Average	22.89	9	32.3

(1) Discrete events are separated by at least six hours between discharges, as defined in State Water Board Order No. WQ 79-16.

D. Compliance Summary

1. **Compliance with Numeric Effluent Limitations.** During the term of Order No. R2-2003-0073, the Discharger reported exceedances of effluent limitations for BOD_5 and pH as summarized in Table F-6.

Table F-6. Summary of Effluent Violations

Date of Violation	Parameter	Effluent Limitation	Reported Value
December 31, 2005	BOD_5	30 mg/L	32.5 mg/L
December 31, 2005	BOD_5 Percent Removal	85% Removal Minimum	76% Removal
October 10, 2007	pH	Between 6 and 9 at all times	5.7

Rainfall records for San Francisco indicate that 2.12 inches of rain fell on December 31, 2005, and 0.82 inches fell on the preceding day. This may have been a “wet weather” day, in which case no exceedance occurred. Similarly on October 10, 2007, the reported date of the pH exceedance, the rainfall was 0.18 inches and the rainfall for the preceding day was 0.43 inches. This rainfall could have contributed to the low pH values. Under these circumstances, Regional Water Board staff did not recommend formal enforcement.

2. **Compliance with Permit Provisions.** A list of special activities required by Order No. R2-2003-0073 and the status toward completing those requirements are shown in Table F-7, below.

Table F-7. Permit Provisions Compliance

Provision Number	Requirement	Status of Completion
F.2 [A]	Marine Mammal Report identifying monitoring methodologies to determine presence of pathogens with potential to affect marine mammals.	Report submitted October 28, 2005.
F.4.i	Nine Minimum Controls (A) Study Plan to monitor CSOD Impacts and Controls due December 1, 2003 (B) Annual Status Reports summarizing data, evaluating CSOD impacts and controls, and proposing revisions to nine minimum controls, if necessary, due August 30 annually. (C) Final Report due 1 year prior to permit expiration.	Submitted November 26, 2003 Submitted 2004, 2005, 2006, 2007 Submitted August 30, 2007

[A] In response to concerns expressed by the National Oceanic Atmospheric Administration (NOAA) Fisheries and US Fish and Wildlife Service regarding the potential of stormwater and undisinfected wastewater from the Southwest Ocean Outfall to transmit pathogens to marine mammals, the previous permit required investigation of methods to determine impacts of human pathogens on marine mammals and conveyance of the findings in a Marine Mammal Report. On October 28, 2005, the Discharger submitted a report that concluded that little information is available regarding the environmental occurrence, fate, and transport of *T. gondii*, *S. neurona*, and Morbilliviruses, microbes of concern to marine mammals, in part because methods for detection of these microbes in the environment are insufficient.

E. Planned Changes

No changes are planned

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

The requirements contained in the proposed Order are based on the requirements and authorities described in this section.

A. Legal Authorities

This Order is issued pursuant to the federal Clean Water Act (CWA) §402 and implementing regulations adopted by the U.S. Environmental Protection Agency (USEPA) and California Water Code (CWC) Chapter 5.5, Division 7 (commencing with §13370). It shall serve as an NPDES permit for point source discharges from this facility to surface waters. This Order also serves as Waste Discharge Requirements (WDRs) pursuant to CWC Article 4, Chapter 4, Division 7 (commencing with §13260). USEPA and the Regional Water Board are jointly issuing this permit. It covers Discharge Point 001, the Southwest Ocean Outfall, which is 3.4 to 3.6 nautical miles offshore in Federal waters. (The territorial waters of the State end three nautical miles from shore.) It also covers Discharge Points CSD-001 through CSD-007, which are near-shore in State waters.

Under Water Code §13389, this action to adopt an NPDES permit is exempt from the provisions of CEQA. Likewise, pursuant to CWA §511(c), this action to reissue an NPDES permit does not trigger the requirements of the National Environmental Policy Act (NEPA) [42 U.S.C. 4321 et seq.].

B. State and Federal Regulations, Policies, and Plans

1. **Water Quality Control Plans.** The *Water Quality Control Plan for the San Francisco Bay Basin* is the Regional Water Board's master water quality control planning document. It designates beneficial uses and water quality objectives for waters of the State, including surface waters and groundwater. It also includes programs of implementation to achieve water quality objectives. The Basin Plan was duly adopted by the Regional Water Board and approved by the State Water Board, USEPA, and the Office of Administrative Law where required.

   Beneficial uses established by the Basin Plan for waters within the San Mateo Coastal Watershed are as follows:

Table F-8. Basin Plan Beneficial Uses

Receiving Water	Basin Plan Beneficial Uses
Territorial waters of the State of California within the Pacific Ocean	• Industrial Service Supply • Ocean, Commercial, and Sport Fishing • Shellfish Harvesting • Marine Habitat • Fish Migration • Preservation of Rare and Endangered Species • Fish Spawning • Wildlife Habitat • Water Contact Recreation • Noncontact Water Recreation • Navigation

   Requirements of this Order implement the Basin Plan.

2. **California Ocean Plan.** The State Water Board adopted the *Water Quality Control Plan for Ocean Waters of California* (Ocean Plan) in 1972 and amended it in 1978, 1983, 1988, 1990, 1997, 2000, and 2005. The State Water Board adopted the latest amendment on April 21, 2005, and it became effective on February 14, 2006. The Ocean Plan applies, in its entirety, to point source discharges to the territorial waters of the State as defined by California law to the extent that these waters are outside of enclosed bays, estuaries, and coastal lagoons. The Ocean Plan identifies the following beneficial uses of ocean waters of the State: Industrial Water Supply; Water Contact and Non-contact Recreation, Including Aesthetic Enjoyment; Navigation; Commercial and Sport Fishing; Mariculture; Preservation and Enhancement of Designated Areas of Special Biological Significance; Rare and Endangered Species; Marine Habitat; Fish Migration; Fish Spawning; and Shellfish Harvesting. To protect beneficial uses, the Ocean Plan establishes water quality objectives and a program of implementation for discharges to state territorial waters.

   Discharge Point 001, the deep water outfall, is 3.4 to 3.6 nautical miles offshore in federal waters. The territorial waters of the State end three nautical miles from shore. The Ocean Plan (Appendix 1, Ocean Waters) states, "If a discharge outside the territorial waters of the State could affect the quality of the waters of the State, the discharge may be regulated to assure no violation of the Ocean Plan will occur in

ocean waters." For the reasons set forth below, the Regional Water Board finds that the discharge at Discharge Point 001 could not affect the quality of the waters of the State during dry weather. During wet weather, the Ocean Plan defers to the Combined Sewer Overflow Control Policy, discussed in Finding K. Therefore, this Order does not regulate the discharge at Discharge Point 001 directly through the Water Board's Ocean Plan authorities.

The Discharger has compiled information demonstrating that the discharge at Discharge Point 001 during dry weather could not affect the quality of the waters of the State ("Assessment of Effects on California State Waters from the Oceanside Southeast Ocean Outfall," September 26, 2008). Regional Water Board staff has supplemented the Discharger's information with independent analysis.

a. **Receiving Water Monitoring.** The Discharger has monitored the receiving waters since the 1970s, before and after the installation of the Southwest Ocean Outfall in 1986. Aquatic biological communities, including benthic communities, do not appear to be any different near the outfall than at reference locations. Sediment quality appears to be similar as well. Since the discharge does not appear to affect water quality in the vicinity of the outfall, there is no evidence that it could affect the quality of State waters.

b. **Dilution.** This Order uses a minimum initial dilution of effluent from Discharge Point 001 of 150:1. The Discharger has submitted a study indicating that initial dilution could be over 170:1 ("Dilution Modeling for the San Francisco Southwest Ocean Outfall," City and County of San Francisco, June 2007). Substantial additional dilution occurs between the outfall and State waters, which are 0.36 nautical miles (2,200 feet) away. A worst-case estimate of this far-field dilution is over 400:1. Regional Water Board staff has concluded that such highly diluted effluent from the deep water outfall could not affect the quality of State waters.

c. **Ocean Currents.** Ocean currents at the Southwest Ocean Outfall typically move parallel to the coast, not toward State waters.

d. **Effluent Toxicity Monitoring.** The Discharger routinely monitors acute and chronic toxicity in the effluent to ensure that it complies with effluent limitations. This monitoring has never indicated a violation of toxicity limitations at the outfall. Therefore, the discharge could not cause toxicity in State waters 0.36 nautical miles away. Receiving water sediment toxicity test results corroborate this conclusion.

e. **Bacteria Monitoring.** In the 1980s, the Discharger completed an extensive study to determine how discharging primary treated effluent from the deep water outfall was affecting receiving water bacteria levels (*Wastefield Transport and Bacteriological Compliance Studies of the San Francisco Ocean Outfall CH2MHill March 1989*). The Discharger now treats its wastewater to secondary treatment standards during dry weather. Regional Water Board staff used data from that study representing primary treatment to estimate the potential effects of discharging secondary-treated effluent (staff memorandum, October 10, 2008). Estimated bacteria levels in federal waters were below Ocean Plan water quality

objectives. Therefore, the deep water discharge could not affect bacteria levels in State waters.

3. **Determination of Unreasonable Degradation of the Marine Environment.** Discharges from the Southwest Ocean Outfall are to waters of the United States beyond the territorial waters of the State of California. Federal regulations at 40 CFR 125.122 require the permitting authority to determine whether a discharge will cause unreasonable degradation of the marine environment. Based on 40 CFR 125.22(b), USEPA conducted a reasonable potential analysis using Ocean Plan objectives and included numeric permit limitations, based on the Ocean Plan's dilution procedures, for toxicity and mercury, the only numeric Ocean Plan objectives for which USEPA found reasonable potential to cause or contribute to an exceedance of water quality standards. USEPA also included narrative receiving water limitations for the Ocean Plan narrative objectives for which it found reasonable potential. For determining reasonable potential for the dioxins, USEPA based its analysis on 40 CFR 125.122(a) and used recently updated Toxicity Equivalency Factors (TEFs) published by the World Health Organization in 2005, as well as the congener-specific Bioconcentration Equivalency Factors (BEFs) used for the Great Lakes System. The "Bay Area Clean Water Agencies' Draft Dioxin Issue Paper: Expert Panel Response and Recommendations," dated April 4, 2008 recommended the use of TEFs and BEFs to develop NPDES permit limits for dioxins. This approach incorporates recent scientific information for dioxins on a congener-specific basis, while continuing to use the Ocean Plan water quality objective for dioxins (TCDD equivalents) and standards implementation procedures. Given the unique issues dioxins present, USEPA has prepared a determination of unreasonable degradation for the ten factors under 40 CFR 125.122(a) (Appendix 1 of this Fact Sheet). USEPA has determined that no unreasonable degradation of the marine environment will result from the discharges of dioxins through the Southwest Ocean Outfall as authorized under this Order, with all the limitations, conditions, and monitoring requirements in effect.

4. **Combined Sewer Overflow Control Policy.** Wet weather flows from combined sewer systems are subject to CWA §301(b)(1)(A) and are not subject to secondary treatment regulations. Wet weather flows from combined sewer systems are addressed by the Combined Sewer Overflow Control Policy (59 Federal Register 18688-18698). The *Wet Weather Water Quality Act of 2000* incorporated this policy into the CWA.

   The policy establishes a consistent national approach for controlling discharges from combined sewers to the nation's water. Using the NPDES permit program, the policy initiates a two-phased process. During the first phase, the Discharger is required to implement "nine minimum controls" (e.g., prevent dry weather overflows). These controls constitute the technology-based requirements of the Clean Water Act as applied to combined sewer facilities (i.e., best conventional pollutant control technology, BCT, and best available control technology economically achievable, BAT). The controls are intended to provide immediate and relatively low-cost water quality improvements for facilities that, unlike the Discharger, have not implemented a long-term control plan. During the first phase, the Discharger is required to initiate development of a long-term control plan to select controls to comply with water quality standards, based on consideration of the Discharger's financial capabilities.

The second phase of the process involves implementation of the long-term control plan developed in the first phase. The purpose of this long-term control plan is to comply with the CWA water quality requirements. The Discharger's program, which continues to implement the Discharger's long-term plan, is consistent with the policy. This Order implements the policy and is consistent with the Regional Water Board policy on wet weather overflows described in Basin Plan Section 4.9. During wet weather, CSODs from shoreline discharge points CSD-001 through CSD-007 and the Southwest Ocean Outfall are subject to this policy.

Ocean Plan Section III.A.4 acknowledges, "Not withstanding any other provisions in this plan, discharges from the City of San Francisco's combined sewer system are subject to the USEPA's Combined Sewer Overflow Policy." In large part, this acknowledgement is a response to State Water Board Order No. WQ 79-16 (March 23, 1979), which granted an exception from the Ocean Plan for wet weather discharges from the Discharger's diversion structures in the western-most portion of the Discharger's combined sewer system. The exception was necessary because CSODs are inherently inconsistent with certain Ocean Plan standards. In accordance with Ocean Plan procedures for granting exceptions, the State Water Board found that there were unusual circumstances not anticipated at the time of the plan's adoption (the Ocean Plan had failed to address CSODs), that beneficial uses would be protected, and that the public interest would be served. Of particular importance to the State Water Board in granting the exception was the Discharger's proposal to improve its wet weather facilities to allow only an average of eight CSODs per year. The exception was subject to several conditions, including:

- The Discharger needed self-monitoring in accordance with Regional Water Board specifications (this Order requires this in Attachment E),

- Beaches and shellfish harvesting areas potentially affected by CSODs needed to be posted (this Order requires this in Section VI.C.6.b(8)),

- To the greatest extent practical, the Discharger needed to design, construct, and operate wet weather facilities to comply with Ocean Plan requirements (this Order requires this in Section VI.C.4),

- Aside from the average of eight CSOD events per year, all other storm water runoff needed to be contained, and the discharge of all other untreated waste to waters of the State was to be prohibited (this Order requires this in Section III; the provision for eight overflow events per year is the design basis of the effluent treatment system).

5. **Alaska Rule.** On March 30, 2000, USEPA revised its regulation that specifies when new and revised state and tribal water quality standards (WQS) become effective for CWA purposes [65 Fed. Reg. 24641 (April 27, 2000), codified at 40 CFR §131.21]. Under the revised regulation (also known as the Alaska rule), new and revised standards submitted to USEPA after May 30, 2000, must be approved by USEPA before being used for CWA purposes. The final rule also provides that standards

already in effect and submitted to USEPA by May 30, 2000, may be used for CWA purposes, whether or not approved by USEPA.

6. **Stringency of Requirements for Individual Pollutants.** This Order contains both technology-based and water quality-based effluent limitations for individual pollutants. This Order's technology-based pollutant restrictions implement the minimum applicable federal technology-based requirements. In addition, this Order contains effluent limitations more stringent than the minimum federal technology-based requirements. The water quality-based limits are necessary to meet water quality standards. They are not more stringent than required by the CWA.

   Water quality-based effluent limitations have been derived to implement water quality objectives that protect beneficial uses. Both beneficial uses and water quality objectives in State waters have been approved pursuant to federal law and are the applicable federal water quality standards. The procedures used for this Order to calculate individual water quality-based effluent limitations for State waters are based on the California Ocean Plan, which was approved by USEPA on February 14, 2006.

7. **Antidegradation Policy.** NPDES regulations at 40 CFR§131.12 require that the State water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution No. 68-16, which incorporates the federal antidegradation policy where the federal policy applies under federal law. Resolution No. 68-16 requires that existing water quality be maintained unless degradation is justified based on specific findings. Water quality plans implement, and incorporate by reference, both the State and federal antidegradation policies. The permitted discharge is consistent with the antidegradation provision of 40 CFR§131.12 and State Water Board Resolution No. 68-16 because there is no increase in authorized flow and effluent limitations are at least as stringent as in the previous permit.

8. **Anti-Backsliding Requirements.** CWA Sections 402(o)(2) and 303(d)(4) and NPDES regulations at 40 CFR §122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require effluent limitations in a reissued permit to be as stringent as those in the previous permit, with some exceptions where limitations may be relaxed. With the exception of acute and chronic toxicity, all effluent limitations in this Order are at least as stringent as the effluent limitations in the previous permit. Compliance with anti-backsliding requirements is discussed in section IV.C.6.

9. **Endangered Species Act.** This Order does not authorize any act that results in the taking of a threatened or endangered species or any act that is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish and Game Code sections 2050 to 2097) or the federal Endangered Species Act (16 U.S.C.A. sections 1531 to 1544). This Order requires compliance with effluent limits, receiving water limits, and other requirements to protect the beneficial uses of waters of the State. The Discharger is responsible for meeting all

requirements of applicable State and federal law pertaining to threatened and endangered species.

§7(a)(2) of the federal Endangered Species Act requires USEPA, in reissuing this NPDES permit, to ensure, after consultation with appropriate agencies, that discharges at the Southwest Ocean Outfall are not likely to jeopardize the continued existence of any threatened or endangered species or result in the destruction or adverse modification of critical habitat for such species. USEPA has initiated informal consultation with National Oceanic Atmospheric Administration (NOAA).

C. Impaired Water Bodies on CWA 303(d) List

On November 30, 2006, USEPA approved a revised list of impaired water bodies prepared by the State [hereinafter referred to as the 303(d) list] pursuant to CWA section 303(d), which requires identification of specific water bodies where it is expected that water quality standards will not be met after implementation of technology-based effluent limitations on point sources. Receiving waters for discharges from CSOD outfalls authorized by this Order are listed as impaired for indicator organisms at Baker Beach, specifically at the mouth of Lobos Creek.

1. Total Maximum Daily Loads

The Regional Water Board plans to adopt Total Maximum Daily Loads (TMDLs) for pollutants on the 303(d) list within ten years. Future review of the 303(d) list may provide schedules or result in revision of schedules for adoption of TMDLs.

2. Waste Load Allocations

The TMDLs will establish waste load allocations (WLAs) for point sources and load allocations for non-point sources, which will result in achieving the water quality standards for waterbodies. Future water quality-based effluent limitations for 303(d) listed pollutants will be based on WLAs contained in the respective TMDLs. If a TMDL is developed and WLAs are established independently for discharges of stormwater and wastewater, these WLAs may be combined to be met collectively by the wastewater and stormwater effluent loads.

IV. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

The CWA requires point source dischargers to control the amount of conventional, non-conventional, and toxic pollutants that are discharged into the waters of the United States. The control of pollutants discharged is established through effluent limitations and other requirements in NPDES permits. There are two principal bases for effluent limitations in the Code of Federal Regulations: section 122.44(a) requires that permits include applicable technology-based limitations and standards; and section 122.44(d) requires that permits include water quality-based effluent limitations to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving water.

A. Discharge Prohibitions

1. **Discharge Prohibition III.A**. (No discharge other than that described in this Order). This prohibition is retained from the previous permit and is based on CWC §13260, which requires filing a Report of Waste Discharge before discharges can occur. Discharges not described in the Report of Waste Discharge, and subsequently in the Order, are therefore prohibited.

2. **Discharge Prohibition III.B**. (No discharge from Discharge Point 001 that does not receive an initial dilution of at least 150:1). This prohibition is retained from the previous permit. In addition, the Order accounts for dilution of 150:1 in the reasonable potential analysis and calculation of WQBELs. The limitations in this Order may not be protective of water quality if the discharge were to not actually achieve a 150:1 initial dilution.

3. **Discharge Prohibition III.C**. (Bypass of secondary treatment is prohibited except as described by the Order on wet weather days or as provided in 40 CFR §122.41(m)(4) and in Regional Standard Provisions, and Monitoring and Reporting Requirements [Attachment G]). This prohibition is retained from the previous permit and is based on NPDES regulations at 40 CFR §122.41(m)(4).

4. **Discharge Prohibition III.D**. (Discharge at a location other than Discharge Point 001 is prohibited except for wet weather days). This prohibition is retained from Order No. R2-2003-0073 and reflects a principle objective of USEPA's *Combined Sewer overflow Control Policy* (1994) to ensure that, if CSODs occur, they are only a result of wet weather and such discharges only occur at specified locations.

5. **Discharge Prohibition III.E**. (Discharge at Discharge Points CSOD-001 through CSOD-007 is prohibited except on wet weather days). This prohibition is retained from the previous permit and reflects a principle objective of USEPA's *Combined Sewer Overflow Control Policy* (1994) to ensure that, if CSODs occur, they are only a result of wet weather.

6. **Discharge Prohibition III.F**. (Average dry weather flow not to exceed 43 MGD). This prohibition is retained from the previous permit, and is based on the design treatment capacity of the Plant. Exceedance of the design capacity may result in lowering the reliability of achieving compliance with effluent limitations.

7. **Discharge Prohibition III.G**. (CSOs are prohibited). CSOs, as opposed to CSODs, are unauthorized discharges from the combined sewer system. This prohibition is necessary because CSOs result in the release of untreated sewage.

8. **Discharge Prohibition III.H**. (Discharge of municipal or industrial sludge to the ocean is prohibited). This prohibition implements Ocean Plan discharge prohibition III.H.3.

9. **Discharge Prohibition III.J**. (Degradation of harvestable shellfish resulting from dry weather discharges is prohibited). This prohibition is retained from the previous permit and implements Ocean Plan discharge prohibition II.B.2.

B. Technology-Based Effluent Limitations

1. Scope and Authority

a. CWA section 301(b) requires USEPA to develop secondary treatment standards for publicly owned wastewater treatment facilities. These standards implement the level of effluent quality attainable through application of secondary or equivalent treatment. USEPA promulgated technology-based effluent guidelines for POTWs at 40 CFR §133. These Secondary Treatment Regulations include the following minimum requirements, which apply to the Plant during dry weather.

Table F-9. Secondary Treatment Requirements

Parameter	30-Day Average Limitation	7-Day Average Limitation
BOD_5 (1)	30 mg/L	45 mg/L
$CBOD_5$ (2)	25 mg/L	40 mg/L
TSS (1)	30 mg/L	45 mg/L
pH	6.0 – 9.0	

(1) The 30-day average percent removal shall not be less than 85 percent.

(2) At the option of the permitting authority, these effluent limitations for $CBOD_5$ may be substituted for BOD_5 limitations.

b. The USEPA Combined Sewer Overflow Control Policy establishes the technology based requirements for combined sanitary sewer systems, which requires implementation of the Nine Minimum Controls. Related requirements are included in section VI.C.6.b. of this Order.

2. Applicable Technology-Based Effluent Limitations

This Order retains the following technology-based effluent limitations, applicable to discharges at Discharge Point 001 during dry weather, as determined at Monitoring Location EFF-001.

a.. **Compliance with limits.** The Discharger shall comply with the following effluent limitations shown in Table F-10.

Table F-10.Technology-based Effluent Limitations – Discharge Point 001

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
BOD_5 @ 20°C	mg/L	30	45	---	---	---
TSS[(1)]	mg/L	30	45	---	---	---
pH	Standard units	---	---	9.0	6.0	9.0

The pH requirement is retained from the previous permit and is established by USEPA's Secondary Treatment Regulations at 40 CFR Part 133 and by Ocean Plan Table A.

b. Percent Removal. Based on Secondary Treatment Regulation at 40 CFR §133.102 and 133.103 and previous permit limits the average monthly percent removal of BOD_5 at 20°C and TSS shall not be less than 85%.

C. Water Quality-Based Effluent Limitations (WQBELs)

1. Scope and Authority

CWA section 301(b) and section 122.44(d) require that permits include limitations more stringent than applicable federal technology-based requirements where necessary to achieve applicable water quality standards. This Order contains requirements, expressed as a technology equivalence requirement, more stringent than secondary treatment requirements that are necessary to meet applicable water quality standards.

Section 122.44(d)(1)(i) mandates that permits include effluent limitations for all pollutants that are or may be discharged at levels that have the reasonable potential to cause or contribute to an exceedance of a water quality standard, including numeric and narrative objectives within a standard. Where reasonable potential has been established for a pollutant, but there is no numeric criterion or objective for the pollutant, water quality-based effluent limitations (WQBELs) must be established using: (1) USEPA criteria guidance under CWA section 304(a), supplemented where necessary by other relevant information; (2) an indicator parameter for the pollutant of concern; or (3) a calculated numeric water quality criterion, such as a proposed state criterion or policy interpreting the state's narrative criterion, supplemented with other relevant information, as provided in section 122.44(d)(1)(vi).

The process for determining reasonable potential and calculating WQBELs when necessary is intended to protect the designated uses of the receiving water as specified in the Basin Plan, and achieve applicable water quality objectives and criteria that are contained in the Ocean Plan.

2. Minimum Initial Dilution

In accordance with the Ocean Plan, water quality-based effluent limits reflect the minimum initial dilution of the effluent as it reaches the receiving water. The minimum initial dilution can be estimated by experimental observation and computer

simulation. The reasonable potential calculation for this Order is based on a dilution ratio of 150:1. This is based on an updated dilution model submitted by the Discharger that averaged UM3 and NRFIELD results and utilized averaged oceanographic data from 1988. If the Discharger provides new information to use with new dilution modeling (see provision VI.C.2.b of this Order), any new results based on updated oceanographic data may be considered for the next permit reissuance.

3. Determining the Need for WQBELs

This Order is based on a reasonable potential analysis based on procedures described in Ocean Plan Section III.C and Ocean Plan Appendix VI to determine the need for WQBELs. In general, the procedure is a statistical method that evaluates an effluent data set while taking into account the averaging period of water quality objectives, the long term variability of pollutants in the effluent, limitations associated with sparse data sets, and uncertainty associated with censored data sets. The procedure assumes a lognormal distribution of the effluent data set and compares the 95th percentile concentration at 95 percent confidence for each pollutant in Ocean Plan Table B, accounting for dilution, to the applicable water quality criterion in Ocean Plan Table B. The reasonable potential analysis results in one of three endpoints.

Endpoint 1 – There is “reasonable potential,” and a WQBEL and monitoring are required.

Endpoint 2 – There is no “reasonable potential.” A WQBEL is not required, but monitoring may be required.

Endpoint 3 – The analysis is inconclusive. There are less than 3 detects or more than 80% of samples are non-detect. Any existing WQBEL is retained, and monitoring is required.

The Ocean Plan reasonable potential analysis involves five paths:

a. First Path

If available information about the receiving water or the discharge supports a finding of reasonable potential without analysis of effluent data, the permitting authority may decide that WQBELs are necessary after a review of such information. Such information may include the facility or discharge type, solids loading, lack of dilution, history of compliance problems, potential toxic effects, fish tissue data, 303(d) status of the receiving water, presence of threatened or endangered species or their critical habitat, or other information.

b. Second Path

If any pollutant concentration, adjusted to account for dilution, is greater than the most stringent applicable water quality criterion, there is reasonable potential for

that pollutant to cause or contribute to exceedances of water quality standards, and a WQBEL is required.

c. Third Path

If the effluent data contains three or more detected and quantified values (i.e., values that are at or above the Minimum Level [ML]), and all values in the data set are at or above the ML, a parametric reasonable potential analysis is conducted to project the range of possible effluent values. The 95th percentile concentration is determined at 95 percent confidence for each pollutant, and compared to the most stringent applicable criterion to determine reasonable potential. A parametric analysis assumes that the range of possible effluent values is distributed lognormally. If the 95th percentile value is greater than the most stringent applicable criterion, there is reasonable potential for that pollutant to cause or contribute to exceedances of water quality standards and a WQBEL is required.

d. Fourth Path

If the effluent data contains three or more detected and quantified values (i.e., values that are at or above the ML), but at least one value in the data set is less than the ML, a parametric reasonable potential analysis is conducted according to the following steps.

(1) If the number of censored values (those expressed as a “less than” value) account for less than 80 percent of the total number of effluent values, calculate the M_L (the mean of the natural log of transformed data) and S_L (the standard deviation of the natural log of transformed data) and conduct a parametric reasonable potential analysis, as described above for the Third Path.

(2) If the number of censored values account for 80 percent or more of the total number of effluent values, conduct a non-parametric reasonable potential anlaysis, as described below for the Fifth Path. (A non-parametric analysis becomes necessary when the effluent data are limited, and no assumptions can be made regarding its possible distribution.)

e. Fifth Path

A non-parametric reasonable potential analysis is conducted when the effluent data set contains less than three detected and quantified values, or when the effluent data set contains three or more detected and quantified values but the number of censored values account for 80 percent or more of the total number of effluent values. A non-parametric analysis is conducted by ordering the data, comparing each result to the applicable criterion, and accounting for ties. The sample number is reduced by one for each tie, when the dilution-adjusted method detection limit (MDL) is greater than the criterion. If the adjusted sample number, after accounting for ties, is greater than 15, the pollutant has no reasonable potential to exceed the water quality standards. If the sample number

is 15 or less, the analysis is inconclusive, monitoring is required, and any existing effluent limits in the expiring permit are retained.

4. Reasonable Potential Analysis

Table F-11 presents results of the reasonable potential analysis. Data used for this analysis are from October 2003 to December 2007 for most inorganics, and from November 2003 to November 2007 for most organics. A dilution of 150:1 was assumed as explained above. The analysis was performed in accordance with Ocean Plan procedures. The endpoint for each criterion is identified. Results show "reasonable potential" for mercury, and as a result, this Order establishes an effluent limitation for mercury. An effluent limit is retained for chronic toxicity because monitoring under the previous permit showed toxicity levels close to the limit.

As shown in the table, the reasonable potential analysis commonly resulted in Endpoint 3, meaning that the analysis is inconclusive, when a majority of the effluent data is reported as ND (not detected). In these circumstances, the "inconclusive" result is an indication of no concern for a particular pollutant; however, continued monitoring is required during the term of the permit.

a. TCDD Equivalents. The calculations to complete a reasonable potential analysis for TCDD equivalents were more complicated than the analysis for other individual pollutants since each sample is analyzed for 16 congeners (Attachment E Section IV.A). For each of the 18 samples (collected between March 2003 and November 2007) the TCDD equivalent of each congener was calculated. When a congener was identified as DNQ (detected but not quantified), then the detection limit value was used in determining the TCDD equivalent for that sample. For each congener in each sample, the TCDD equivalent was calculated using the TEF and BEF as described in Attachment A TCDD equivalents. To determine the TCDD equivalent for each sample, the TCDD equivalents of each congener in that sample were summed.

The State Water Board has developed a reasonable potential calculator (RPcalc 2.0) for use with the Ocean Plan. The use of this program is described at http://www.waterboards.ca.gov/water_issues/programs/ocean/docs/trirev/stakeholder050505/rphelp20.pdf The calculator is available at the State Water Board's web site: www.waterboards.ca.gov/plnspols/docs/oplans/rpcalc.zip. The calculator was used to determine the need for TCDD equivalents limits in this Order.

To determine the upper 95th upper confidence bound for the 95th percentile the TCDD equivalent value for the set of 18 samples, the TCDD equivalent value for each sample, or zero for samples with no congeners detected, was entered into the RPcalc program. The results, using a dilution ratio of 76:1, showed no reasonable potential for TCDD equivalents. Therefore, there would also be no reasonable potential assuming 150:1 dilution.

b. Chronic Toxicity. The reasonable potential analysis shown in Table F-11 does not show reasonable potential for chronic toxicity when accounting for at least 150:1 dilution; however, USEPA finds reasonable potential by the first path identified above because monitoring data collected during the term of the previous permit showed chronic toxicity at levels close to the limit and because similar excursions could occur in the future.

c. Total Chlorine Residual. On May 17, 1989, the Regional Water Board adopted Order No. 89-71, amending Order No. 88-106 to delete disinfection requirements for the effluent. The Regional Water Board action was based on the Discharger's technical report dated April 3, 1989, *Wastefield Transport and Bacteriological Compliance Studies of the San Francisco Ocean Outfall*. The studies were conducted in 1987 and 1988. The findings indicated that the non-disinfected wastewater discharge from the Discharge Point 001 did not violate the Ocean Plan bacteriological body-contact standards. There is no disinfection of the effluent and thus no potential for disinfectant residuals or by-products, for example from chlorine, to impact the effluent.

Table F-11. Reasonable Potential Analysis Results for the Discharge Point 001

Table B Pollutant	Most Stringent WQO (µg/L)[1]	No. of Samples	No. of Non-Detects	Max Effluent Conc. (µg/L)	Result, Comment
Objectives for Protection of Marine Aquatic Life					
Ammonia	600	93	0	44	Endpoint 2
Arsenic	8	51	34	5.9	Endpoint 2
Cadmium	1	51	32	1.9	Endpoint 2
Chlorinated Phenolics	1	15	15	ND	Endpoint 3
Chromium (VI)	2	72	42	5.4 (DNQ)	Endpoint 2
Acute Toxicity	0.3[6]				Endpoint 2
Chronic Toxicity	1[2]	53	22	50	Endpoint 3[4] **Effluent Limit** and monitoring
Copper	3	51	0	70	Endpoint 2
Cyanide	1	52	9	6.8	Endpoint 2
Endosulfan (total)	0.009	18	18	ND	Endpoint 2
Endrin	0.002	18	18	ND	Endpoint 2
HCH	0.004	18	18	ND	Endpoint 2
Lead	2	51	20	8.6	Endpoint 2
Mercury	0.04	53	0	12	Endpoint 1 –**Effluent limit** and monitoring
Nickel	5	51	3	7.2	Endpoint 2
Non-chlorinated Phenolics	30	15	14	5.0	Endpoint 3
Radioactivity[3]	-	9	3	37	Endpoint 2
Selenium	15	51	37	1.8	Endpoint 2
Silver	0.7	51	21	3.8	Endpoint 2
Total Chlorine Residual	2	0	0	0[5]	Endpoint 2
Zinc	20	51	0	146	Endpoint 2
Objectives for Protection of Human Health – Noncarcinogens					
1,1,1-Trichloroethane	540000	20	20	ND	Endpoint 2
2,4-Dinitrophenol	4.0	15	14	5.0	Endpoint 3

Table B Pollutant	Most Stringent WQO (µg/L)[1]	No. of Samples	No. of Non-Detects	Max Effluent Conc. (µg/L)	Result, Comment
2-Methyl-4,6-Dinitrophenol	220	15	15	ND	Endpoint 3
Acrolein	220	12	11	22	Endpoint 3
Antimony	1200	18	17	0.94	Endpoint 2
Bis(2-Chloroethoxy)Methane	4.4	15	15	ND	Endpoint 3
Bis(2-Chloroisopropyl)Ether	1200	15	15	ND	Endpoint 3
Chlorobenzene	570	20	18	0.44	Endpoint 2
Chromium (III)	190000	51	30	5.4	Endpoint 2
Dichlorobenzenes	5100	19	13	1.2	Endpoint 2
Diethyl Phthalate	33000	15	14	0.47	Endpoint 3
Dimethyl Phthalate	820000	15	15	ND	Endpoint 3
Di-n-Butyl Phthalate	3500	15	15	ND	Endpoint 3
Ethylbenzene	4100	20	16	0.64	Endpoint 2
Fluoranthene	15	17	17	ND	Endpoint 2
Hexachlorocyclopentadiene	58	15	15	ND	Endpoint 3
Nitrobenzene	4.9	15	15	ND	Endpoint 3
Thallium	2	18	18	ND	Endpoint 2
Toluene	85000	20	8	1.6	Endpoint 2
Tributylin	0.0014	17	16	0.008	Endpoint 2
Objectives for Protection of Human Health – Carcinogens					
1,1,2,2-Tetrachloroethane	2.3	20	20	ND	Endpoint 2
1,1,2-Trichloroethane	9.4	20	20	ND	Endpoint 2
1,1-Dichloroethylene	0.9	20	20	ND	Endpoint 2
1,2-Dichloroethane	28	20	19	0.08	Endpoint 2
1,2-Diphenylhydrazine	0.16	15	15	ND	Endpoint 3
1,3-Dichloropropylene	8.9	20	20	ND	Endpoint 2
1,4 Dichlorobenzene	18	19	13	0.84	Endpoint 2
TCDD Equivalents	3.9E-9	18	3	1.8E-09	Endpoint 2
2,4,6-Trichlorophenol	0.29	15	15	ND	Endpoint 3
2,4-Dinitrotoluene	2.6	15	15	ND	Endpoint 3
3,3'-Dichlorobenzidine	0.0081	15	15	ND	Endpoint 3
Acrylonitrile	0.10	13	13	ND	Endpoint 3
Aldrin	2.2E-5	18	18	ND	Endpoint 2
Benzene	5.9	20	20	ND	Endpoint 2
Benzidine	6.9E-5	15	15	ND	Endpoint 3
Beryllium	0.033	18	17	0.086	Endpoint 2
Bis(2-Chloroethyl)Ether	0.045	15	15	ND	Endpoint 3
Bis(2-Ethylhexyl)Phthalate	3.5	15	15	ND	Endpoint 3
Carbon Tetrachloride	0.90	17	17	ND	Endpoint 2
Chlordane	2.3E-5	18	18	ND	Endpoint 2
Chlorodibromomethane	8.6	20	19	0.95	Endpoint 2
Chloroform	130	20	5	9.8	Endpoint 2
DDT (total)	0.00017	18	18	ND	Endpoint 2
Dichlorobromomethane	6.2	18	13	0.65	Endpoint 2
Dieldrin	0.00004	18	18	ND	Endpoint 2
Halomethanes	130	19	14	0.66	Endpoint 2
Heptachlor	0.00005	18	18	ND	Endpoint 2
Heptachlor Epoxide	0.00002	18	18	ND	Endpoint 2
Hexachlorobenzene	0.00021	15	15	ND	Endpoint 3

Table B Pollutant	Most Stringent WQO (µg/L)[1]	No. of Samples	No. of Non-Detects	Max Effluent Conc. (µg/L)	Result, Comment
Hexachlorobutadiene	14	15	15	ND	Endpoint 3
Hexachloroethane	2.5	15	15	ND	Endpoint 3
Isophorone	730	15	15	ND	Endpoint 3
Methylene Chloride	450	20	14	1.6	Endpoint 2
N-Nitrosodimethylamine	7.3	15	15	ND	Endpoint 3
N-Nitrosodi-n-Propylamine	0.38	15	15	ND	Endpoint 3
N-Nitrosodiphenylamine	2.5	15	15	ND	Endpoint 3
PAHs (total)	0.0088	20	18	0.0083	Endpoint 2
PCBs	1.9E-5	18	18	ND	Endpoint 2
Tetrachloroethylene	2.0	20	9	8.4	Endpoint 2
Toxaphene	0.00021	18	18	ND	Endpoint 2
Trichloroethylene	27	20	20	ND	Endpoint 2
Vinyl Chloride	36	20	19	1.3	Endpoint 2

Table notes

(1) Ocean Plan Table B Water Quality Objectives limiting concentrations are 6-month median values.
(2) Chronic toxicity is based on a daily maximum.
(3) Measured in pCi/L, radioactivity not to exceed limits specified in Title 17, Division 1, Chapter 5, Subchapter 4, Group 3, Article 3, Section 30253 of the CCR§30253.
(4) Reasonable Potential was not found by calculation but was an issue in the previous permit and effluent limits retained, also monitoring is required in the Ocean Plan (Section III.C.c.(4))
(5) Chlorine is not added to the effluent for disinfection, or any other purpose, and there is no monitoring for residual chlorine
(6) The Ocean Plan does not require monitoring for acute toxicity and previous monitoring did not show reasonable potential.

- NA indicates that effluent data is not available.
- ND indicates that the pollutant was not detected.

5. WQBEL Calculations

As described by Section III. C of the Ocean Plan, Effluent limits for Table B pollutants that show reasonable potential are calculated according to the following equation.

$$Ce = Co + Dm (Co – Cs)$$

Where

Ce = the effluent limitation (µg/L)

Co = the concentration (the water quality objective) to be met at the completion of initial dilution (µg/L).

Cs = background seawater concentration (µg/L)

Dm = minimum probable initial dilution expressed as parts seawater per part wastewater

a. **Mercury**

The reasonable potential analysis showed reasonable potential for mercury because the maximum monthly average mercury concentration in the effluent was 12 µg/L, which when accounting for dilution of 150:1, results in a concentration of 0.08 µg/L, which is above the six-month median water quality objective of 0.04 µg/L. Therefore, this Order establishes mercury WQBELs as described below:

Co (6-month median) = 0.04 µg/L
Co (daily maximum) = 0.16 µg/L
Dm = 149 (based on a dilution of 150:1)
Cs = 0.0005 µg/L (based on Ocean Plan Table C)

Ce (6-month median) = Co (6-month median) + Dm (Co – Cs) = 5.9 µg/L
Ce (daily maximum) = Co (daily maximum) + Dm (Co – Cs) = 24 µg/L

b. **Chronic Toxicity**

The reasonable potential analysis using the Ocean Plan calculation method did not show reasonable potential for chronic toxicity (accounting for at least 150:1 dilution); however, USEPA finds reasonable potential because monitoring under the previous permit showed chronic toxicity at levels close to the limit and since similar excursions may occur that limit is retained in this Order. A chronic toxicity WQBEL may be calculated as follows:

Co (daily maximum) = 1.0 TUc
Dm = 149 (based on a dilution of 150:1)
Cs = 0 TUc (based on Ocean Plan Table C)
Ce (daily maximum) = Co (daily maximum) + Dm (Co – Cs) = 150 TUc

6. Anti-Backsliding/Antidegradation

Most effluent limitations established by this Order are at least as stringent as limitations in the previous permit; and therefore, CWA anti-backsliding requirements are not triggered. As for acute toxicity, monitoring required under the previous permit did not show any reasonable potential. Also, the Ocean Plan does not require acute toxicity limits for this type of discharge, but does require monitoring and an effluent limit for chronic toxicity. Thus, this permit does not contain an acute toxicity limit but does require continued monitoring, and it imposes a chronic toxicity limit.

As for chronic toxicity, the new limit is higher than the limit in the previous permit; however, this is permissible under anti-backsliding regulations. Although the permittee did not exceed the chronic toxicity limit in the previous permit, the previous permit allowed the removal of ammonia prior to chronic toxicity testing. This Order does not allow removal of ammonia prior to toxicity testing because ammonia may contribute to toxicity in the receiving water. Accordingly, the Discharger's toxicity monitoring requirements have been modified. Data provided by the Discharger

indicate that a chronic toxicity limit of 76 cannot consistently be met without ammonia removal. Therefore, this Order applies the new dilution factor of 150:1 to calculate the chronic toxicity limit and relies on the backsliding exceptions under CWA Sections 402(o)(2)(B)(i) and 402(o)(2) (E), and 40 CFR 122.44(l)(2)(b)(1) and 122.44(l)(2)(i)(E).

Because this Order does not authorize an increased rate of discharge or increased pollutant loadings to receiving waters, the antidegradation requirements of 40 CFR 131.13 and State Water Board Resolution No. 68-16 are also satisfied.

D. Land Discharge Specifications

Not Applicable.

E. Reclamation Specifications

Not Applicable.

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

This Order is designed to minimize the influence of the discharge on the receiving water. Ocean Plan Section II serves as the basis for the receiving water limitations specified in Section V.A of the Order. These limits are needed to ensure that the receiving water complies with Ocean Plan water quality objectives and therefore protects beneficial uses.

VI. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

NPDES regulations at 40 CFR 122.48 require that all NPDES permits specify requirements for recording and reporting monitoring results. CWC §13267 and §13383 authorize the Regional Water Board to require technical and monitoring reports. In addition, the Ocean Discharge Criteria (40 CFR Part 125, subpart M) authorize actions necessary to prevent unreasonable degradation of the marine environment. The Monitoring and Reporting Program (MRP), Attachment E, establishes monitoring and reporting requirements to implement federal and State requirements. The rationale for the monitoring and reporting requirements contained in the MRP for this facility is presented below.

A. Influent Monitoring

In general, influent monitoring requirements are unchanged from the previous permit. Influent monitoring requirements for BOD_5 and TSS are necessary to determine compliance with this Order's 85 percent removal requirement. Influent monitoring for tributyltin and TCDD equivalents are no longer required because previous monitoring has provided for characterization of these pollutants in influent wastewater.

The influent monitoring location remains unchanged, but this Order revises its name for consistency with other NPDES permits in California.

B. Effluent Monitoring

In general, effluent monitoring requirements for discharges from Discharge Point 001 are retained from the previous permit, with the following exceptions:

- Monitoring for toxic pollutants has been updated to reflect the most recent list of pollutants in Ocean Plan Table B.
- Monitoring for mercury is required one time per month to determine compliance with new mercury effluent limitations.
- The monitoring frequency for chronic toxicity has been set at once per quarter. Monitoring data collected each month during the term of the previous permit showed results consistently below effluent limitations.

The effluent monitoring location for Discharge Point 001 has not changed; however, its name has been changed from E-007 to EFF-001, for consistency with other NPDES permits in California.

Monitoring requirements for discharges at a representative CSOD outfall are retained from the previous permit. However, this Order establishes an additional requirement to monitor for the Table B pollutants not currently monitored at this outfall to further characterize these discharges for future reasonable potential analysis.

C. Whole Effluent Toxicity Testing Requirements

The Discharger is required to conduct chronic toxicity tests as described in the MRP (Attachment E) using the Echinoderm Embryo Development test in accordance with the USEPA approved method in 40 CFR 136 (currently *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms*, August 1995).

The Discharger performed a screening phase study prior to the expiration of the previous permit for the most sensitive West Coast marine species. The results of this study indicated that the giant kelp germination and growth test was the most sensitive, but suggested the test was variable in part due to the availability and quality of field-collected organisms, and suggested the use of the echinoderm embryo development test because gravid species of two alternate echinoderms, the sand dollar and the purple urchin, could alternately be obtained year-round.

This Order retains the requirement to conduct chronic toxicity monitoring with the echinoderm embryo development test and requires the Discharger to re-screen for the most sensitive species once during the term of this Order.

D. Receiving Water Monitoring

Receiving water monitoring is necessary to ensure compliance with the receiving water limits specified in Section V.A of the Order. Requirements to monitor bacteria in shoreline receiving waters and to conduct recreational use surveys, in the Provisions of

the Order, Section VI.6.(9), during and immediately after CSOD events are retained from the previous permit. The monitoring requirements in MRP (Attachment E) sections IV, VIII, and X are sufficient to characterize receiving water quality.

E. Other Monitoring Requirements

Requirements of the Southwest Ocean Outfall Offshore Monitoring Program are retained from the previous permit to determine the effect of the discharge on sediment quality in the vicinity of the outfall and to determine whether pollutants are bioaccumulating in fauna. The program includes monitoring at 45 locations, including 24 reference locations that are unaffected by the discharge. Monitoring includes chemical and physical analysis of sediment, analysis of the benthic (bottom) community, and analysis of fish and macroinvertebrate species collected by trawling.

1. Offshore Monitoring Program History

In 1986, the Southwest Ocean Outfall was completed to transport primary treated wastewater from the Richmond-Sunset Plant, which was replaced in 1993 by the Oceanside Plant. Monitoring conducted from 1986 to 1996 indicated that a single reference location was inadequate to fully characterize background conditions and to determine whether observed differences between monitoring locations were attributable to natural variation or to the discharge. These early studies also showed that the season or time of year had the greatest impact on study results, and that the relatively close proximity of the Southwest Ocean Outfall to the mouth of the San Francisco Bay confounded interpretation of monitoring results due to the effects of outflow near the Golden Gate.

Following collaboration between the Discharger and USEPA, when the Discharger's permit was reissued in 1997, the study area was expanded to include multiple reference sites, and monitoring frequency was reduced to once per year, in the Fall. In the permit, seven fixed monitoring sites were retained, and an additional 40 monitoring locations were added using USEPA's Environmental Monitoring Assessment Program (EMAP) random sample site selection process. The expanded study area included reference locations in the Gulf of the Farallones and the Monterey Bay National Marine Sanctuaries.

In 2002, additional benthic monitoring locations, south of the discharge pipe, were included in the program to investigate whether the pipe structure itself was affecting benthic infauna abundance through an induced reef affect. When the Discharger's permit was reissued in 2003, the number of required trawls was reduced from eight to two, following observation of no differences among mobile organisms between outfall and reference locations, and in an effort to reduce mortality of collected organisms. At that time, some sediment monitoring locations were also removed from the program because they were found to be inconsistent with the rest of the study area.

As stated in Order No. R2-2003-0073, "This program will be implemented dynamically to maximize the amount of relevant and useful data that can be gathered within the five-year permit life by allowing the EPA, the Regional Water Board, and the City and

County of San Francisco to agree to program corrections in response to ongoing analyses of monitoring data."

2. Monitoring Results from Previous Permit

In January 2006, the Discharger submitted the most recent summary report covering the years from 1997 through 2004. The report indicates no adverse trends in sediment characteristics as a result of the discharge. The mean particle sizes at the outfall area have not changed since pre-construction and pre-discharge periods, which suggests that the Southwest Ocean Outfall does not affect sediment grain size distribution. Additional data collected in 2005 and 2006 show that the outfall area continues to reflect pre-construction and pre-discharge sediment grain size distribution.

Chemical analysis for total solids; total volatile solids; total organic carbon; total Kjeldahl nitrogen; organic pollutants, such as PAHs, PCBs, and DDTs; and trace metals were used to assess the chemical quality of the sediment. Total volatile solvent measurements correlated with areas with high fractions of silt and clay, while total organic carbon and total Kjeldahl nitrogen results correlated with areas of fine sand. All three parameters are historically highest in the northern reference region, indicating little influence of the Southwest Ocean Outfall discharge on these parameters. Sediment chemical quality data collected in 2005 and 2006 indicate that reference stations exceeded tolerance bounds derived from previous monitoring data for percent silt and clay and total organic carbon, but outfall areas were within tolerance bounds for all constituents.

PAH contaminants were present in the sediments prior to discharge and, over the 8 years of measurements, appear to be transitory and affected by sediment movement via currents and winter storms. Concentrations were compared to the Effects Range Medium (ERM) of Sediment Quality Guidelines, which are concentrations of individual compounds that demonstrate the 50% probability of toxic effects. No ERM values for any individual PAH, PCB, or DDT were exceeded during the eight year period. Trace metal analysis of the sediment resulted in consistent exceedances of the ERM values for nickel during the eights years of monitoring; however, nickel occurs naturally in large amounts in the San Francisco Bay area. Overall, the sediment data for the eight years between 1997 an 2004 indicate that the Southwest Ocean Outfall discharge has not negatively affected sediment quality. In 2005, concentrations of 18 PAHs and three PCBs were detected throughout the study area, and total DDTs were detected at three stations. One DDT and 18 PAH compounds were detected in the sediment in 2006. Cadmium, nickel, zinc, and selenium were significantly lower at outfall stations in 2005 over the 2004 results, while nickel concentrations were elevated at all stations in the study area in 2005 and 2006, similar to previous years. Arsenic, selenium, and silver were significantly higher at outfall stations in 2006 versus 2005, while aluminum and mercury were significantly lower at outfall stations in 2006 versus 2005.

The trend of the benthic community analysis over the eight year period indicated that community abundance was more affected by climate than by the discharge, because decreases in abundance correlated with reduced upwelling of the California Current, associated with oceanographic events like El Niño. Analyses of demersal fish and

epibenthic invertebrate communities for the eight year period did not indicate any apparent effects related to the Southwest Ocean Outfall and observed differences in species composition and abundance correlated with El Niño and La Niña events. Benthic infauna community abundance decreased in 2005 and 2006 to the lowest documented overall abundance for the previous ten years. The local upwelling index in 2004 through 2006 was lower than normal, and the sequential years of decreased summer current upwelling occurrences may be related to an overall increase in infauna abundance. Trawl organisms collected in 2005 and 2006 represented a general assortment of native species common to central California near-shore communities; however, the demersal fish community measures of abundance and diversity were at or below the lower tolerance bounds for the outfall location in 2006. Physical anomalies of collected species were similar in all the 2004, 2005, and 2006 sample events.

Samples were screened for physical anomalies, and tissues were analyzed for bioaccumulative substances. Overall organism conditions were similar between the outfall locations and reference locations. The English sole and the Dungeness crab were species selected for bioaccumulation analysis. Three DDTs, 11 PAHs, and 31 PCB congeners were detected in the liver and hepatopancreas tissues. PCB concentrations were statistically significantly higher in the livers of fish collected from the outfall area over those of fish collected in the reference area throughout the study years, and total PAHs frequently exceeded the screening value in all tissue types in organisms from both the reference and outfall areas. There were not any statistically significant trends in bioaccumulation in any organism from either the reference or outfall areas, nor any trends between organism tissue and sediment concentrations. Mercury levels in fish muscle and zinc concentrations in the fish liver at the outfall area were significantly greater than those sampled in the reference area; however, all concentrations were below the mercury screening value the Discharger chose for the purposes of the study (mercury 0.5 ppm wet weight, and zinc 1500 ppm wet weight). Total PAH concentrations above the screening value were detected in every tissue type (except for fish liver) at both the reference and outfall locations in 2005, and were detected above the screening value in fish liver in 2006. Trace metal concentrations in 2005 and 2006 were similar to previous years and were similar to California coastal organisms in other studies.

VII. RATIONALE FOR PROVISIONS

A. Standard Provisions

Standard Provisions, which apply to all NPDES permits in accordance with section 122.41, and additional conditions applicable to specified categories of permits in accordance with section 122.42, are provided in Attachment D to the Order.

Section 122.41(a)(1) and (b) through (n) establish conditions that apply to all State issued NPDES permits. These conditions must be incorporated into the permits either expressly or by reference. If incorporated by reference, a specific citation to the regulations must be included in the Order. Section 123.25(a)(12) allows the state to omit or modify conditions to impose more stringent requirements. In accordance with section 123.25, this Order omits federal conditions that address enforcement authority specified

in sections 122.41(j)(5) and (k)(2) because the enforcement authority under the Water Code is more stringent. In lieu of these conditions, this Order incorporates by reference Water Code section 13387(e).

B. Monitoring and Reporting Program

The rationale for these requirements is described in Section VI, above and in Attachment G, Regional Standard Provisions and Monitoring Requirements for NPDES Wastewater Discharge Permits, July 2009.

C. Special Provisions

1. Reopener Provisions

These provisions are based on 40 CFR Part 123 and allow future modification of this Order and its effluent limitations as necessary.

2. Special Studies, Technical Reports and Additional Monitoring Requirements

a. Combined Sewage Collection System Overflow Study

The combined sewer system commingles storm water and domestic and industrial sewage. Heavy storm events can potentially result in flows that exceed the collection system capacity, at least in some areas. Although all overflows would be captured by the collection system at another point and not be discharged to surface waters, the presence of storm water and sewage on and around streets and sidewalks where human exposure could occur would constitute a nuisance as defined by CWC §13050. Such nuisances are prohibited by Regional Standard Provisions, and Monitoring and Reporting Requirements for NPDES Wastewater Discharge Permits (Attachment G). The purpose of this study is to determine whether nuisance conditions occur during wet weather and, if so, the extent to which they occur and what can be done to minimize or eliminate them.

b. Dilution Model Update and Stratification Data Collection

The available ambient data to determine stratification for the purposes of dilution modeling for this discharge is out-dated and incomplete. This provision requires the Discharger to submit updated data during the next permit reissuance to support new findings related to the most appropriate dilution allowance.

3. Best Management Practices and Pollution Prevention

The provision to continue implementation of a Pollutant Minimization Program is retained from the previous permit and is based on Ocean Plan Section C.9. The provision for pollution prevention is also required as one of the Nine Minimum Controls for combined sewer systems, described in under item 6, below.

4. Construction, Operation, and Maintenance Specifications

a. Wastewater Facilities, Review and Evaluation, and Status Reports

This provision is retained from the previous permit.

b. Operations and Maintenance (O&M) Manual, Review and Status Reports

This provision is based on 40 CFR Part 122 and is retained from the previous permit.

c. Contingency Plan, Review, and Status Reports

This provision is required by Regional Water Board Resolution No. 74-10 and 40 CFR Part 122, and is retained from the previous permit.

5. Special Provisions for Municipal Facilities

a. Pretreatment Program Requirements. This provision requires the Discharger to implement and enforce its approved pretreatment program in accordance with federal pretreatment regulations at 40 CFR Part 403.

b. Sludge Management Practices Requirements. This provision is based on the Basin Plan Chapter IV, Section 14.17, and 40 CFR Parts 257 and 503.

6. Combined Sewer Overflow Control Policy Requirements

The requirements of this provision specify performance criteria for operating the Combined Sewer System under wet weather controls, and are retained from the previous permit. The USEPA *Combined Sewer Overflow Control Policy* (59 FR 18688) regulates the operation of combined sewer systems. The Discharger has designed, constructed, and implemented control and treatment strategies that effectively address wet weather flow conditions, including treatment for 100% of the combined effluent.

The requirements of the USEPA *Combined Sewer Overflow Control Policy* are summarized below:

a. CSO Operation Plan. The Operation Plan is required as part of the Nine Minimum Controls and is revised as necessary to include the long term controls implemented in the long term control plan. This Order retains a provision to revise and update this Plan.

b. Nine Minimum Controls. The Combined Sewer Overflow Control Policy requires "Nine Minimum Controls" to satisfy the CWA technology-based requirements regarding CSOs. These are specifically stated in the provisions of this Order (Section VI.C.6.b) and described generally below .

(1) Conduct proper operations and regular maintenance programs. This control includes a requirement for continuing development and implementation of an Operations Plan.

(2) Maximize use of the collection system for storage. This control refers specifically to the sewer lines, which provide 2.2 million gallons of storage.

(3) Review and modify pretreatment program. This control is intended to minimize the impacts of non-domestic discharges.

(4) Maximize flow to the Plant. Maximizing flow to the Plant maximizes the volume of combined sewer flow treated.

(5) Prohibit CSOs during dry weather. The CWA prohibits CSOs during dry weather, and that prohibition is implemented as one of the Nine Minimum Controls.

(6) Control solid and floatable materials in the CSOs. The control of solids and floatable material is implemented via a baffle system within the combined sewer system and removal of the collected solids captured in the storage/transports.

(7) Develop and implement a Pollution Prevention Program. The Discharger is required to implement a Pollution Prevention Program, as described in section VI.C.3.a. of this Order.

(8) Notify the public of overflows. The Discharger's current notification process fulfills these requirements. The process includes permanent information signs at all beach locations around the perimeter of San Francisco. These signs inform the public in English, Spanish, and Chinese that international NO SWIMMING signs will be posted when it is unsafe to enter the water, and they warn users that bacteria concentrations may be elevated during periods of heavy rainfall. NO SWIMMING signs are posted at beach locations whenever an overflow occurs in the vicinity. These signs remain posted until water sampling indicates that bacteria concentrations have dropped below the level of concern for water contact recreation. Both signs reference the Discharger's toll-free water quality hotline (1-877-SFBEACH), which is updated weekly or whenever beach conditions change. The Discharger also provides color coded indicators (green/open; red/posted) of beach water quality conditions on the Internet (http://beaches.sfwater.org).

(9) Monitor to effectively characterize overflow impacts and the efficacy of CSOD controls. Monitoring requirements established by this Order include all of the Ocean Plan Table B toxic pollutants to better characterize the potential impacts of CSODs on the receiving water.

c. Long-Term Control Plan. In conformance with the *Combined Sewer Overflow Control Policy*, the Discharger developed a long-term control plan to select CSOD controls to comply with water quality standards, based on consideration of the Discharger's financial capability. The purpose of the long-term control plan is to fulfill the water quality-based requirements of the Clean Water Act. The Discharger's program is consistent with the USEPA *Combined Sewer Overflow Control Policy* Presumptive Approach, which presumes that an adequate level of

control is provided to meet the water quality requirements of the CWA contingent upon the satisfaction of any of the following criteria: (1) no more than an average of four overflow events per year, provided that the permitting authority may allow up to two additional overflow events per year (for the purpose of this criterion, an overflow event is one or more CSOs as a result of a precipitation event that does not receive the minimum treatment provided below); (2) the elimination or capture for treatment of no less than 85 percent by volume of the combined sewage collected in the system during precipitation events on a system-wide annual average basis; or (3) the elimination or removal of no less than the mass of pollutants, identified as causing water quality impairment through the sewer system characterization, monitoring, and modeling effort, for the volumes that would be eliminated or captured for treatment under (2) above. Combined sewer overflow treatment shall be a minimum of primary clarification for removal of floatables and settleable solids, solids and floatables disposal, and if necessary to meet water quality standards, disinfection.

The Discharger will continue to implement the Long-Term Control Plan and will characterize combined sewer discharges and the efficacy of the Long-Term-Control-Plan controls through combined sewer discharge monitoring, a requirement that is carried over from the previous permit.

The CSODs are consistent with the requirements of the Presumptive Approach because the Discharger captures and provides treatment to 100 percent of the combined sewer flow, which is greater than the minimum treatment requirement of 85 percent specified under the Presumptive Approach, and results in zero untreated CSOs per year. The effluent is not disinfected because State Water Board Order No.79-16 concluded that allowing an average of eight CSODs per year from Ocean Plan requirements would serve the public interest and would not compromise beneficial uses of the receiving waters.

7. Sensitive Areas Feasibility Report for Overflows

Under the Combined Sewer Overflow Control Policy, the combined sewer discharge points for the Oceanside plant are located in a sensitive area where primary contact recreation occurs. Section II. C. 3 of the Combined Sewer Overflow Control Policy, “Consideration of Sensitive Areas,” states that the Discharger’s long-term combined sewer overflow control plan should:

a. Prohibit new or significantly increased overflows;

b. (1) Eliminate and relocate overflows that discharge to sensitive areas wherever physically possible and economically achievable, except where elimination or relocation would provide less environmental protection than additional treatment.

(2) Where elimination or relocation is not physically possible and economically achievable, or would provide less environmental protection than additional treatment, provide the level of treatment for remaining

overflows deemed necessary to meet WQS for full protection of existing and designated uses. In any event, the level of control should not be less than those described in Evaluation of Alternatives below; and

c. Where elimination or relocation has been proven not to be physically possible and economically achievable, permitting authorities should require, for each subsequent permit term, a reassessment based on new or improved techniques to eliminate or relocate, or on changed circumstances that influence economic achievability."

The Discharger is to submit a report, no later than two years after the effective date of this Order, implementing the "consideration of sensitive areas" section of the Combined Sewer Overflow Control Policy. At a minimum, the discharger is to assess techniques to eliminate or relocate CSODs to sensitive areas, and discuss the level of treatment for any remaining CSODs necessary to meet water quality standards.

VIII. PUBLIC PARTICIPATION

The Regional Water Board is considering the issuance of waste discharge requirements (WDRs) that will serve as a National Pollutant Discharge Elimination System (NPDES) permit for City and County of San Francisco Oceanside Water Pollution Control Plant and Collection System, including the Westside Wet Weather Facilities. As a step in the WDR adoption process, Regional Water Board staff has developed tentative WDRs. The Regional Water Board encourages public participation in the WDR adoption process.

A. Notification of Interested Parties

The Regional Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe WDRs for the discharge and has provided an opportunity to submit their written comments and recommendations. Notification was provided through a public notice in the San Francisco Recorder during the time period June 8 to June 14, 2009.

Staff determinations are tentative. Interested persons are invited to submit written comments concerning these tentative WDRs. Comments must be submitted either in person or by mail or email to

Derek Whitworth
San Francisco Bay Regional Water Quality Control Board
1515 Clay St., Suite 1400
Oakland, CA 994612

Phone: 510 622 2349
Email: DWhitworth@waterboards.ca.gov

Written comments must be received at the Regional Water Board offices by 5:00 p.m. on July 6, 2009, to be given full consideration and to be fully responded to by Regional Water Board staff.

B. Public Hearings

The Regional Water Board will hold a public hearing on the tentative WDRs during its regular meeting on the following date and time and at the following location:

Date: August 12, 2009
Time: 9:00 a.m.
Location: Elihu Harris State Office Building
1515 Clay Street, 1st Floor Auditorium
Oakland, CA 94612

Interested persons are invited to attend. At this public hearing, the Regional Water Board will hear testimony, if any, on this Tentative Order.. Oral testimony will be heard; however, for accuracy of the record, important testimony should be in writing.

The Order may then be adopted by the Regional Water Board and USEPA at the subsequent hearing to be held on September 9, 2009, at the same time and place.

Please be aware that dates and venues may change. One can access the current agenda for any changes at: www.waterboards.gov/sanfranciscobay.

C. Waste Discharge Requirements Petitions

Any aggrieved person may petition the State Water Resources Control Board to review the decision of the Regional Water Board regarding the final WDRs. The petition must be submitted within 30 days of the Regional Water Board's action to the following address:

State Water Resources Control Board
Office of Chief Counsel
P.O. Box 100, 1001 I Street
Sacramento, CA 95812-0100

D. Information and Copying

The Report of Waste Discharge, related documents, tentative effluent limitations and special provisions, comments received, and other information are on file and may be inspected at the address above at any time between 8:30 a.m. and 4:45 p.m., Monday through Friday. Copying of documents may be arranged by calling 510-622-2300.

E. Register of Interested Persons

Any person interested in being placed on the mailing list for information regarding the WDRs and NPDES permit should contact the Regional Water Board, reference this facility, and provide a name, address, and phone number.

F. Additional Information

Requests for additional information or questions regarding this order should be directed to Derek Whitworth at 510-622-2349 or email DWhitworth@waterboards.ca.gov.

Appendix 1

Ocean Discharge Criteria Evaluation
NPDES Permit CA0037681
City and County of San Francisco
Oceanside Water Pollution Control Plant (Southwest Ocean Outfall)
Prepared by EPA, Region 9 Water Division
April 27, 2009

Background and Purpose

The purpose of this analysis is to provide supporting documentation for the EPA's evaluation of unreasonable degradation of the marine environment under Section 403 of the Clean Water Act (CWA) for the City and County of San Francisco's Oceanside draft permit. This draft permit is jointly proposed by the EPA and the State of California's San Francisco Bay Regional Water Quality Control Board (Water Board). This analysis applies to the discharge to Federal waters from the Southwest Ocean Outfall.

EPA Region 9 is proposing to comply with the CWA evaluation of unreasonable degradation for this discharge by applying State water quality standards contained in the California Ocean Plan (COP) to the discharge from the Southwest Ocean Outfall, with the exception of the pollutant TCDD equivalents (dioxin). In calculating NPDES permit limitations and conditions for dioxin for this discharge, EPA is using the COP numeric criterion for this pollutant, as well as the COP standard implementation procedures, such as dilution procedures. However, we are proposing to use additional, more recent scientific information that has not yet been considered for inclusion in the COP water quality standards, based on EPA's ocean discharge criteria regulations at 40 CFR 125.122(a). For the calculation of NPDES permit limitations for dioxin, we are proposing to use recently updated toxicity equivalency factors (TEFs), published by the World Health Organization in 2005, as well as the congener-specific bioconcentration equivalency factors (BEFs) used for the Great Lakes System. This approach to developing NPDES permit limits for dioxin was recommended in the "Bay Area Clean Water Agencies' Draft Dioxin Issue Paper: Expert Panel Response and Recommendations," dated April 4, 2008. It incorporates recent scientific information for dioxins on a congener-specific basis, while continuing to use the COP criterion and standards implementation procedures. Region 9's use of the TEFs and BEFs in the draft permit at this time does not constitute EPA endorsement of this approach in other situations.

Because we are proposing to supplement the State water quality standards with some additional information for dioxin, we have developed an analysis of the 10 factors under 40 CFR 125.122(a) to determine unreasonable degradation of the marine environment. The definition of unreasonable degradation of the marine environment in 40 CFR 125.121(e) states:

Unreasonable degradation of the marine environment means:

(1) Significant adverse changes in ecosystem diversity, productivity and stability of the biological community within the area of discharge and surrounding biological communities,
(2) Threat to human health through direct exposure to pollutants or through consumption of exposed aquatic organisms, or
(3) Loss of esthetic, recreational, scientific or economic values which is unreasonable in relation to the benefit derived from the discharge.

The remainder of this evaluation discusses each of the 10 factors and describes our conclusion that the discharge of dioxin will not cause unreasonable degradation of the marine environment under the Federal regulations.

Evaluation of the Ten Ocean Discharge Criteria under 40 CFR 125.122(a)(1)-(10)

Factor 1: Quantities, Composition, and Potential for Bioaccumulation or Persistence of Pollutants to be Discharged

The quantities and composition of the discharge reflect the main source of dioxins to the plant influent, which appears to be stormwater collected in the combined sewer system. In addition to effluent monitoring, the prior NPDES permit for the Southwest Ocean Outfall required a sampling program to assess dioxin in the City's wastewater discharged to the ocean, and the discharger completed a City-wide dioxin monitoring and assessment report in 2000 (Rourke et. al., 2000). The City's combined sewer system commingles wastewater from homes and businesses with stormwater. The sampling results show that stormwater has significantly higher concentrations of dioxins than dry weather wastewater influent flowing to the plant.

Because all of the City's stormwater receives some level of treatment prior to discharge, the discharge of dioxin to the environment is less than would be expected in a similar community with separate storm sewers. In fact the City's monitoring report (Rourke et. al., 2000) estimated that the wastewater control facilities remove more than 80% of dioxin contained in all stormwater runoff from the City. Communities with separate storm sewers are not categorically required to provide treatment and therefore generally remove no dioxin from their stormwater.

According to the discharger's report, influent to the City's Southeast plant was significantly higher in dioxin on wet weather days than the influent to the Oceanside plant. The sampling report attributed this result to the fact that the service area for the Southeast plant is primarily industrial, so the eastern side of the City would be expected to have a heavier loading due to emissions from diesel engines and other combustion sources. Influent to the Southeast plant during wet weather was on average 35 pg/l TEQ. The report measured average untreated dry weather influent to the Oceanside plant as 1.3 pg/l TEQ, while the average influent during wet weather was 16 pg/l TEQ. At the Oceanside Plant, wet weather effluent (primary/secondary blend) averaged 1.7 pg/l TEQ, while dry weather effluent was less than 0.06 pg/l.

The quantities and composition of the dioxin discharge from the Southwest Ocean Outfall are fairly well characterized, as the discharger has monitored Southwest Ocean Outfall effluent for the dioxin congeners specified in the COP for over 10 years. However, because the detection levels for available quantitation methods (EPA method 1613 is typically used) are often one or more orders of magnitude higher than the water quality criterion, there is some scientific

uncertainty associated with the analysis. Of the 18 sample points used to develop this draft permit, the sample taken on February 13, 2007 contained the highest measured level of TCDD equivalents at 1.35x10-7ug/l with the BEFs and TEFs applied, and 1.0x10-6 ug/l with only TEFs applied. On this day, 6 dioxin congeners were detected: 1,2,3,4,6,7,8-HpCDF, 1,2,3,4,7,8-HxCDF, 1,2,3,6,7,8-HxCDF, 2,3,4,6,7,8-HxCDF, OCDD, and OCDF. The most toxic congener, 2,3,7,8-TCDD, was not detected on any of the days. On most days, most of the congeners were not detected, with the exception of OCDD, which is the most commonly detected congener in the effluent.

Results from the dry weather effluent monitoring data required as a condition of the previous NPDES permit show levels of dioxin consistent with dry weather data from other wastewater treatment plants. Using EPA method 1613, the samples shows a majority of non-detect values, with the congener OCDD most commonly detected. The Water Board and EPA applied COP reasonable potential procedures to the dry weather effluent data, with the addition of updated TEF values and the use of the default Great Lakes BEF values. The result of the analysis was no reasonable potential for the discharge of dioxin to cause or contribute to a water quality exceedance, and thus a water quality-based effluent limitation for TCDD equivalents is not required.

Factor 1 also includes the potential for bioaccumulation or persistence. Dioxin is a bioaccumulative and persistent pollutant. The COP water quality criterion was developed to take this into account, and the BEFs quantify the bioaccumulative properties of each congener regulated under the COP. EPA and the Water Board appropriately considered the bioaccumulative properties of the dioxin congeners in the development of the proposed NPDES permit provisions. Additionally, the location of the outfall along with the diffuser ensures that mixing and dispersion occur, and thus it is unlikely that dioxin in the water column or sediments will build to levels expected to threaten human health due to the consumption of exposed aquatic organisms.

In summary, because the main source of dioxin to the Southwest Ocean Outfall discharge appears to be stormwater and because all the stormwater receives treatment, EPA believes the discharge of dioxin to the environment is less than that from other similar communities with separate storm sewers. While the introduction of dioxins continues to be of concern on a global scale, the dioxin contribution from the Southwest Ocean Outfall discharge is not likely to be a significant source in comparison to that from other urban communities.

Factor 2: Potential for Biological, Physical, or Chemical Transport

Biological transport could occur through the bioaccumulative properties of dioxin. This is taken into account by the COP criterion, as human health impacts through the consumption of aquatic organisms are the bases for the most limiting COP criterion for dioxin relevant to this discharge.

As is the case for many organic pollutants in wastewater, dioxin is associated with effluent suspended solids. Thus, physical transport can occur through the movement of sediment, as well as through the water column. The Westside Wet Weather Facilities treatment, which

consists of solids settling, is effective in removing some dioxin from the discharge (Rourke et. al., 2000).

Because dioxins are persistent compounds that remain stable in the environment, chemical transport is not significant.

The Southwest Ocean Outfall discharges 3.4 to 3.6 nautical miles from the shore, which provides dilution, mixing, and dispersion of pollutants into the open ocean environment. These processes decrease the likelihood that dioxin concentrations in the water column or in sediment would build to levels of concern. The San Francisco Bay is listed as impaired for dioxins under section 303(d) of the CWA, but the receiving waters for the Southwest Ocean Outfall are not listed as impaired. The San Francisco Bay is surrounded by urban development, with more sources of dioxins and fewer opportunities for dispersion into the ocean than the Southwest Ocean Outfall discharge. A comparison of data from the San Francisco Bay's Regional Monitoring Program to sediment and fish tissue data collected as part of the prior NPDES permit's Southwest Ocean Outfall receiving water monitoring requirements concludes that organic pollutants in fish and sediments from San Francisco Bay were higher than those in fish and sediments on the coast (Melwani, undated).

Although the Southwest Ocean Outfall receiving water monitoring does not directly measure dioxins in the sediment and fish tissue of the receiving waters, analysis of bioaccumulative compounds such as mercury and PCBs, including dioxin-like PCBs, was conducted. Based on data collected over ten years, the discharger's analysis did not find any upward trends in the levels of bioaccumulative pollutants in sediments or fish tissue, or any differences between the outfall stations and the reference stations that would indicate an outfall effect (SFPUC, 2006). Thus, EPA does not believe the potential for biological, physical, or chemical transport will cause unreasonable degradation of the ocean environment.

Factor 3: Composition and Vulnerability of Biological Communities

The discharger has conducted benthic infauna community monitoring as well as trawl studies. Fishes collected in the study area represent a general assortment of native species common to central California near-shore waters, with occasional occurrences of species from warmer, southern waters. The biological communities in the vicinity of the discharge appear to be similar to those in other sandy bottom ocean environments off the coast of central California. Federally-listed species under the Endangered Species Act as well as Essential Fish Habitat species under the Magnuson-Stevens Fishery Conservation and Management Act occur in the vicinity of the discharge. EPA is in the process of informal consultation with NOAA Fisheries for this permit reissuance. EPA received a "not likely to adversely affect" determination from NOAA Fisheries for the last two re-issuances of this NPDES permit. Accordingly, EPA is unaware of any specific concerns regarding dioxin for species of concern in the vicinity of the discharge.

Factor 4: Importance of the Receiving Water to the Surrounding Biological Community

EPA is unaware of any unique habitat in the area of the discharge, such as spawning sites, kelp beds, or "hauling out" sites for marine mammals.

Factor 5: Existence of Special Aquatic Sites

The Monterey Bay National Marine Sanctuary (MBNMS) is located in the vicinity of the discharge. However, the Southwest Ocean Outfall discharge itself is not located within the sanctuary boundary. Instead, it is located within an exclusion zone that extends from off the north coast of San Mateo County and the City and County of San Francisco between Point Bonita and Point San Pedro (NOAA 1992, 1999a). Accordingly, the discharge from the Southwest Ocean Outfall is not expected to have a significant adverse effect on the MBNMS.

Factor 6: Potential Impacts on Human Health

As described in factor 10 below, the proposed NPDES permit is based on a water quality criterion for dioxin TEQ developed for the COP which considers the risk to human health from consuming fish and shellfish. Because dioxin congeners are persistent, bioaccumulative pollutants, the discharger will continue to monitor Southwest Ocean Outfall effluent for the presence of dioxin congeners. However, the reasonable potential analysis conducted using reasonable potential procedures developed for COP water quality objectives indicate that dioxin in the Southwest Ocean Outfall effluent has no reasonable potential to cause or contribute to the exceedance of the receiving water quality standard for dioxin.

Factor 7: Recreational and Commercial Fisheries

Recreational and commercial fishing is common in the Pacific Ocean right outside the San Francisco Bay. For this reason, the discharger has been monitoring sediments and fish tissue for bioaccumulative pollutants for over 10 years as part of the Southwest Ocean Outfall monitoring program. No significant outfall effects or upward trends in pollutant concentrations have been found.

Factor 8: Coastal Zone Management Plan

The California Coastal Zone Management Plan (CZMP) incorporates the COP. Because the COP implements water quality standards for dioxin in the Southwest Ocean Outfall discharge, the COP contains the most relevant and specific CZMP requirements. As previously stated, this draft permit proposes to implement the COP criteria and policies, including the policy on dilution, with the addition of the application of TEFs and BEFs for determining reasonable potential for dioxin under the NPDES program.

The Coastal Zone Management Act requires that states make consistency determinations for any federally licensed or permitted activity affecting the coastal zone of a state with an approved CZMP. California's Coastal Management Program was approved in 1978 and established the California Coastal Commission (CCC) as lead agency for program implementation. However, CCC staff has stated that the CCC does not conduct consistency reviews for wastewater treatment plants that operate at secondary treatment levels and thus the CCC will not be providing a consistency determination for the proposed permit

Factor 9: Other Factors Relating to Effects of the Discharge

EPA is proposing to include additional, more recent scientific information that has not yet been considered for inclusion in the COP water quality standards, based on EPA's ocean discharge criteria regulations at 40 CFR 125.122(a). For the calculation of NPDES permit limitations for dioxin, we are proposing to use recently updated toxicity equivalency factors (TEFs), published by the World Health Organization in 2005, as well as the congener-specific bioconcentration equivalency factors (BEFs) used for the Great Lakes System. As explained above, this approach for developing NPDES permit limits for dioxin was recommended in the "Bay Area Clean Water Agencies' Draft Dioxin Issue Paper: Expert Panel Response and Recommendations," dated April 4, 2008, and it incorporates updated scientific information for dioxins on a congener-specific basis, while continuing to use the COP criterion and standards implementation procedures. While Region 9 has the discretion to use these factors under the ocean discharge regulations, Region 9's use of the TEFs and BEFs in the draft permit at this time does not constitute EPA endorsement of this approach in other situations.

Factor 10: Marine Water Quality Criteria Under CWA 304(a)(1)

The current recommended EPA marine water quality criteria for dioxin are 5.1E-09 ug/l for consumption of organisms only, and 5.0E-09 ug/l for consumption of water and organisms. These recommended criteria are based on a carcinogenicity of 10-6 risk. The water quality criteria adopted for dioxin in the COP is 3.9E-09 ug/l for TCDD equivalents on a 30 day average basis. Applying the TEFs and BEFs as well as a conservative 76:1 dilution, under the COP reasonable potential (RP) procedure, which closely parallels the RP procedure in "EPA's Technical Support Document for Water Quality-Based Toxics Control (TSD, USEPA 1991)," EPA and the Water Board conclude the discharge does not have RP for dioxin, and thus the draft permit contains no numeric limits for dioxin. Because the COP criterion for dioxin is more stringent than the EPA recommended criteria, this discharge would not be expected to cause exceedances of the EPA criteria.

Conclusion: Determination of No Unreasonable Degradation of the Marine Environment

Based on consideration of the ten factors discussed above, Region 9 has determined that no unreasonable degradation of the marine environment will result from the discharges of dioxin through the Southwest Ocean Outfall as proposed under NPDES permit CA003768, with all the limitations, conditions, and monitoring requirements in effect.

EPA recognizes that bioaccumulative pollutants such as dioxin are of concern in the receiving waters of the Pacific Ocean, as commercial and recreational fishing takes place in these waters. However, monitoring over a 10 year period has not shown increasing concentrations of bioaccumulative substances in sediment or fish tissue in the vicinity of the discharge. Further, EPA expects that the contribution of dioxins from the Southwest Ocean Outfall discharge is lower than in other urban areas of similar size, due to the City's stormwater treatment facilities and residential service area which, unlike industrial areas, is expected to generate fewer dioxins. The proposed NPDES permit will require continued effluent monitoring for dioxin congeners. The Southwest Ocean Outfall monitoring program will continue to monitor for selected bioaccumulative pollutants in sediment and fish tissue, including dioxin-like PCBs. Finally, because stormwater is significantly higher in dioxin than dry-weather flows, the

proposed permit requirement that the discharger develop options to reduce pollutant loading in stormwater, such as green infrastructure efforts, is expected to reduce dioxin loading to the receiving water.

References

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National Oceanic and Atmospheric Administration 1992. Monterey Bay National Marine Sanctuary. Final Environmental Impact Statement/Management Plan. Volume II: Appendices. U.S. Department of Commerce National Oceanic and Atmospheric Administration Sanctuaries and Reserves Division. 1999a. Monterey Bay National Marine Sanctuary. http://www.sanctuaries.nos.noaa.gov/oms/omsfarallones/omsfarallones.html

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San Francisco Public Utilities Commission, Natural Resources Division, Oceanside Biological Laboratory. “Southwest Ocean Outfall Regional Monitoring Program Eight-Year Summary Report 1997—2004.” January, 2006. http://sfwater.org/detail.cfm/MC_ID/20/MSC_ID/198/MTO_ID/515/C_ID/3102

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ATTACHMENT G
REGIONAL STANDARD PROVISIONS, AND MONITORING AND REPORTING REQUIREMENTS
(SUPPLEMENT TO ATTACHMENT D)

For

NPDES WASTEWATER DISCHARGE PERMITS

July 2009

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CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

REGIONAL STANDARD PROVISIONS, AND MONITORING AND REPORTING REQUIREMENTS (SUPPLEMENT TO ATTACHMENT D)

FOR

NPDES WASTEWATER DISCHARGE PERMITS

APPLICABILITY

This document applies to dischargers covered by a National Pollutant Discharge Elimination System (NPDES) permit. This document does not apply to Municipal Separate Storm Sewer System (MS4) NPDES permits.

The purpose of this document is to supplement the requirements of Attachment D, Standard Provisions. The requirements in this supplemental document are designed to ensure permit compliance through preventative planning, monitoring, recordkeeping, and reporting. In addition, this document requires proper characterization of issues as they arise, and timely and full responses to problems encountered. To provide clarity on which sections of Attachment D this document supplements, this document is arranged in the same format as Attachment D.

I. STANDARD PROVISIONS - PERMIT COMPLIANCE

A. Duty to Comply – Not Supplemented

B. Need to Halt or Reduce Activity Not a Defense – Not Supplemented

C. Duty to Mitigate – This supplements I.C. of Standard Provisions (Attachment D)

1. **Contingency Plan -** The Discharger shall maintain a Contingency Plan as originally required by Regional Water Board Resolution 74-10 and as prudent in accordance with current municipal facility emergency planning. The Contingency Plan shall describe procedures to ensure that existing facilities remain in, or are rapidly returned to, operation in the event of a process failure or emergency incident, such as employee strike, strike by suppliers of chemicals or maintenance services, power outage, vandalism, earthquake, or fire. The Discharger may combine the Contingency Plan and Spill Prevention Plan into one document. Discharge in violation of the permit where the Discharger has failed to develop and implement a Contingency Plan as described below will be the basis for considering the discharge a willful and negligent violation of the permit pursuant to California Water Code Section 13387. The Contingency Plan shall, at a minimum, contain the provisions of a. through g. below.

    a. Provision of personnel for continued operation and maintenance of sewerage facilities during employee strikes or strikes against contractors providing services.

b. Maintenance of adequate chemicals or other supplies and spare parts necessary for continued operations of sewerage facilities.

c. Provisions of emergency standby power.

d. Protection against vandalism.

e. Expeditious action to repair failures of, or damage to, equipment and sewer lines.

f. Report of spills and discharges of untreated or inadequately treated wastes, including measures taken to clean up the effects of such discharges.

g. Programs for maintenance, replacement, and surveillance of physical condition of equipment, facilities, and sewer lines.

2. **Spill Prevention Plan** - The Discharger shall maintain a Spill Prevention Plan to prevent accidental discharges and minimize the effects of such events. The Spill Prevention Plan shall:

   a. Identify the possible sources of accidental discharge, untreated or partially treated waste bypass, and polluted drainage;

   b. Evaluate the effectiveness of present facilities and procedures, and state when they became operational; and

   c. Predict the effectiveness of the proposed facilities and procedures, and provide an implementation schedule containing interim and final dates when they will be constructed, implemented, or operational.

   This Regional Water Board, after review of the Contingency and Spill Prevention Plans or their updated revisions, may establish conditions it deems necessary to control accidental discharges and to minimize the effects of such events. Such conditions may be incorporated as part of the permit upon notice to the Discharger.

D. Proper Operation & Maintenance – This supplements I.D of Standard Provisions (Attachment D)

1. **Operation and Maintenance (O&M) Manual** - The Discharger shall maintain an O&M Manual to provide the plant and regulatory personnel with a source of information describing all equipment, recommended operational strategies, process control monitoring, and maintenance activities. To remain a useful and relevant document, the O&M Manual shall be kept updated to reflect significant changes in treatment facility equipment and operational practices. The O&M Manual shall be maintained in usable condition and be available for reference and use by all relevant personnel and Regional Water Board staff.

2. **Wastewater Facilities Status Report** - The Discharger shall regularly review, revise, or update, as necessary, its Wastewater Facilities Status Report. This report shall document how the Discharger operates and maintains its wastewater collection, treatment, and disposal facilities to ensure that all facilities are adequately staffed, supervised, financed, operated,

maintained, repaired, and upgraded as necessary to provide adequate and reliable transport, treatment, and disposal of all wastewater from both existing and planned future wastewater sources under the Discharger's service responsibilities.

3. **Proper Supervision and Operation of Publicly Owned Treatment Works (POTWs) -** POTWs shall be supervised and operated by persons possessing certificates of appropriate grade pursuant to Division 4, Chapter 14, Title 23 of the California Code of Regulations.

E. Property Rights – Not Supplemented

F. Inspection and Entry – Not Supplemented

G. Bypass – Not Supplemented

H. Upset – Not Supplemented

I. Other – This section is an addition to Standard Provisions (Attachment D)

1. Neither the treatment nor the discharge of pollutants shall create pollution, contamination, or nuisance as defined by California Water Code Section 13050.

2. Collection, treatment, storage, and disposal systems shall be operated in a manner that precludes public contact with wastewater, except in cases where excluding the public is infeasible, such as private property. If public contact with wastewater could reasonably occur on public property, warning signs shall be posted.

3. If the Discharger submits a timely and complete Report of Waste Discharge for permit reissuance, this permit continues in force and effect until a new permit is issued or the Regional Water Board rescinds the permit.

J. Storm Water – This section is an addition to Standard Provisions (Attachment D)

These provisions apply to facilities that do not direct all storm water flows from the facility to the wastewater treatment plant headworks.

1. **Storm Water Pollution Prevention Plan (SWPP Plan**)

The SWPP Plan shall be designed in accordance with good engineering practices and shall address the following objectives:

a. To identify pollutant sources that may affect the quality of storm water discharges; and

b. To identify, assign, and implement control measures and management practices to reduce pollutants in storm water discharges.

The SWPP Plan may be combined with the existing Spill Prevention Plan as required in accordance with Section C.2. The SWPP Plan shall be retained on-site and made available upon request of a representative of the Regional Water Board.

2. Source Identification

The SWPP Plan shall provide a description of potential sources that may be expected to add significant quantities of pollutants to storm water discharges, or may result in non-storm water discharges from the facility. The SWPP Plan shall include, at a minimum, the following items:

a. A topographical map (or other acceptable map if a topographical map is unavailable), extending one-quarter mile beyond the property boundaries of the facility, showing the wastewater treatment facility process areas, surface water bodies (including springs and wells), and discharge point(s) where the facility's storm water discharges to a municipal storm drain system or other points of discharge to waters of the State. The requirements of this paragraph may be included in the site map required under the following paragraph if appropriate.

b. A site map showing the following:

1) Storm water conveyance, drainage, and discharge structures;

2) An outline of the storm water drainage areas for each storm water discharge point;

3) Paved areas and buildings;

4) Areas of actual or potential pollutant contact with storm water or release to storm water, including but not limited to outdoor storage and process areas; material loading, unloading, and access areas; and waste treatment, storage, and disposal areas;

5) Location of existing storm water structural control measures (i.e., berms, coverings, etc.);

6) Surface water locations, including springs and wetlands; and

7) Vehicle service areas.

c. A narrative description of the following:

1) Wastewater treatment process activity areas;

2) Materials, equipment, and vehicle management practices employed to minimize contact of significant materials of concern with storm water discharges;

3) Material storage, loading, unloading, and access areas;

4) Existing structural and non-structural control measures (if any) to reduce pollutants in storm water discharges; and

5) Methods of on-site storage and disposal of significant materials.

d. A list of pollutants that have a reasonable potential to be present in storm water discharges in significant quantities.

3. Storm Water Management Controls

The SWPP Plan shall describe the storm water management controls appropriate for the facility and a time schedule for fully implementing such controls. The appropriateness and priorities of controls in the SWPP Plan shall reflect identified potential sources of pollutants. The description of storm water management controls to be implemented shall include, as appropriate:

a. Storm water pollution prevention personnel

Identify specific individuals (and job titles) that are responsible for developing, implementing, and reviewing the SWPP Plan.

b. Good housekeeping

Good housekeeping requires the maintenance of clean, orderly facility areas that discharge storm water. Material handling areas shall be inspected and cleaned to reduce the potential for pollutants to enter the storm drain conveyance system.

c. Spill prevention and response

Identify areas where significant materials can spill into or otherwise enter storm water conveyance systems and their accompanying drainage points. Specific material handling procedures, storage requirements, and cleanup equipment and procedures shall be identified, as appropriate. The necessary equipment to implement a cleanup shall be available, and personnel shall be trained in proper response, containment, and cleanup of spills. Internal reporting procedures for spills of significant materials shall be established.

d. Source control

Source controls include, for example, elimination or reduction of the use of toxic pollutants, covering of pollutant source areas, sweeping of paved areas, containment of potential pollutants, labeling of all storm drain inlets with “No Dumping” signs, isolation or separation of industrial and non-industrial pollutant sources so that runoff from these areas does not mix, etc.

e. Storm water management practices

Storm water management practices are practices other than those that control the sources of pollutants. Such practices include treatment or conveyance structures, such as drop inlets, channels, retention and detention basins, treatment vaults, infiltration galleries, filters, oil/water separators, etc. Based on assessment of the potential of various sources to contribute pollutants to storm water discharges in significant quantities, additional storm water management practices to remove pollutants from storm water discharges shall be implemented and design criteria shall be described.

f. Sediment and erosion control

Measures to minimize erosion around the storm water drainage and discharge points, such as riprap, revegetation, slope stabilization, etc., shall be described.

g. Employee training

Employee training programs shall inform all personnel responsible for implementing the SWPP Plan. Training shall address spill response, good housekeeping, and material management practices. New employee and refresher training schedules shall be identified.

h. Inspections

All inspections shall be done by trained personnel. Material handling areas shall be inspected for evidence of, or the potential for, pollutants entering storm water discharges. A tracking or follow up procedure shall be used to ensure appropriate response has been taken in response to an inspection. Inspections and maintenance activities shall be documented and recorded. Inspection records shall be retained for five years.

i. Records

A tracking and follow-up procedure shall be described to ensure that adequate response and corrective actions have been taken in response to inspections.

4. Annual Verification of SWPP Plan

An annual facility inspection shall be conducted to verify that all elements of the SWPP Plan are accurate and up-to-date. The results of this review shall be reported in the Annual Report to the Regional Water Board described in Section V.C.f.

K. Biosolids Management – This section is an addition to Standard Provisions (Attachment D)

Biosolids must meet the following requirements prior to land application. The Discharger must either demonstrate compliance or, if it sends the biosolids to another party for further treatment or distribution, must give the recipient the information necessary to ensure compliance.

1. Exceptional quality biosolids meet the pollutant concentration limits in Table III of 40 CFR Part 503.13, Class A pathogen limits, and one of the vector attraction reduction requirements in 503.33(b)(1)-(b)(8). Such biosolids do not have to be tracked further for compliance with general requirements (503.12) and management practices (503.14).

2. Biosolids used for agricultural land, forest, or reclamation shall meet the pollutant limits in Table I (ceiling concentrations) and Table II or Table III (cumulative loadings or pollutant concentration limits) of 503.13. They shall also meet the general requirements (503.12) and management practices (503.14) (if not exceptional quality biosolids) for Class A or Class B pathogen levels with associated access restrictions (503.32) and one of the 10 vector attraction reduction requirements in 503.33(b)(1)-(b)(10).

3. Biosolids used for lawn or home gardens must meet exceptional quality biosolids limits.

4. Biosolids sold or given away in a bag or other container must meet the pollutant limits in either Table III or Table IV (pollutant concentration limits or annual pollutant loading rate limits) of 503.13. If Table IV is used, a label or information sheet must be attached to the biosolids packing that explains Table IV (see 503.14). The biosolids must also meet the Class A pathogen limits and one of the vector attraction reduction requirements in 503.33(b)(1)-(b)(8).

II. STANDARD PROVISIONS – PERMIT ACTION – Not Supplemented

III. STANDARD PROVISIONS – MONITORING

A. Sampling and Analyses – This section is a supplement to III.A and III.B of Standard Provisions (Attachment D)

1. Use of Certified Laboratories

Water and waste analyses shall be performed by a laboratory certified for these analyses in accordance with California Water Code Section 13176.

2. Use of Appropriate Minimum Levels

Table C lists the suggested analytical methods for the 126 priority pollutants and other toxic pollutants that should be used, unless a particular method or minimum level (ML) is required in the MRP.

For priority pollutant monitoring, when there is more than one ML value for a given substance, the Discharger may select any one of those cited analytical methods for compliance determination provided the ML is below the effluent limitation and the water quality objective. If no ML value is below the effluent limitation and water quality objective, then the Regional Water Board will assign the lowest ML value indicated in Table C, and its associated analytical method for inclusion in the MRP. For effluent monitoring, this alternate method shall also be U.S. EPA-approved (such as the 1600 series) or one of those listed in Table C. All monitoring instruments and equipment shall be properly calibrated and maintained to ensure accuracy of measurements.

3. Frequency of Monitoring

The minimum schedule of sampling analysis is specified in the MRP portion of the permit.

a. Timing of Sample Collection

i. The Discharger shall collect samples of influent on varying days selected at random and shall not include any plant recirculation or other sidestream wastes, unless otherwise stipulated by the MRP.

ii. The Discharger shall collect samples of effluent on days coincident with influent sampling unless otherwise stipulated by the MRP or the Executive Officer. The Executive Officer may approve an alternative sampling plan if it is demonstrated to be representative of plant discharge flow and in compliance with all other permit requirements.

iii. The Discharger shall collect grab samples of effluent during periods of day-time maximum peak effluent flows (or peak flows through secondary treatment units for facilities that recycle effluent flows).

iv. Effluent sampling for conventional pollutants shall occur on at least one day of any multiple-day bioassay test the MRP requires. During the course of the test, on at least one day, the Discharger shall collect and retain samples of the discharge. In the event a bioassay test does not comply with permits limits, the Discharger shall analyze these retained samples for pollutants that could be toxic to aquatic life and for which it has effluent limits.

1) The Discharger shall perform bioassay tests on final effluent samples; when chlorine is used for disinfection, bioassay tests shall be performed on effluent after chlorination-dechlorination; and

2) The Discharger shall analyze for total ammonia nitrogen and calculate the amount of un-ionized ammonia whenever test results fail to meet the percent survival specified in the permit.

b. Conditions Triggering Accelerated Monitoring

i. If the results from two consecutive samples of a constituent monitored in a 30-day period exceed the monthly average limit for any parameter (or if the required sampling frequency is once per month and the monthly sample exceeds the monthly average limit), the Discharger shall, within 24 hours after the results are received, increase its sampling frequency to daily until the results from the additional sampling shows that the parameter is in compliance with the monthly average limit.

ii. If any maximum daily limit is exceeded, the Discharger shall increase its sampling frequency to daily within 24 hours after the results are received that indicate the exceedance of the maximum daily limit until two samples collected on consecutive days show compliance with the maximum daily limit.

iii. If final or intermediate results of an acute bioassay test indicate a violation or threatened violation (e.g., the percentage of surviving test organisms of any single acute bioassay test is less than 70 percent), the Discharger shall initiate a new test as soon as practical, and the Discharger shall investigate the cause of the mortalities and report its findings in the next self-monitoring report (SMR).

iv. The Discharger shall calibrate chlorine residual analyzers against grab samples as frequently as necessary to maintain accurate control and reliable operation. If an effluent violation is detected, the Discharger shall collect grab samples at least every 30 minutes until compliance with the limit is achieved, unless the Discharger monitors chlorine residual continuously. In such cases, the Discharger shall continue to conduct continuous monitoring as required by its permit.

v. When any type of bypass occurs, the Discharger shall collect samples on a daily basis for all constituents at affected discharge points that have effluent limits for the duration of the bypass, unless otherwise stipulated by the MRP.

c. Storm Water Monitoring

The requirements of this section only apply to facilities that are not covered by an NPDES permit for storm water discharges and where not all site storm drainage from process areas (i.e., areas of the treatment facility where chemicals or wastewater could come in contact with storm water) is directed to the headworks. For storm water not directed to the headworks during the wet season (October 1 to April 30), the Discharger shall:

i. Conduct visual observations of the storm water discharge locations during daylight hours at least once per month during a storm event that produces significant storm water discharge to observe the presence of floating and suspended materials, oil and grease, discoloration, turbidity, and odor, etc.

ii. Measure (or estimate) the total volume of storm water discharge, collect grab samples of storm water discharge from at least two storm events that produce significant storm water discharge, and analyze the samples for oil and grease, pH, TSS, and specific conductance.

The grab samples shall be taken during the first 30 minutes of the discharge. If collection of the grab samples during the first 30 minutes is impracticable, grab samples may be taken during the first hour of the discharge, and the Discharger shall explain in the Annual Report why the grab sample(s) could not be taken in the first 30 minutes.

iii. Testing for the presence of non-storm water discharges shall be conducted no less than twice during the dry season (May 1 to September 30) at all storm water discharge locations. Tests may include visual observations of flows, stains, sludges, odors, and other abnormal conditions; dye tests; TV line surveys; or analysis and validation of accurate piping schematics. Records shall be maintained describing the method used, date of testing, locations observed, and test results.

iv. Samples shall be collected from all locations where storm water is discharged. Samples shall represent the quality and quantity of storm water discharged from the facility. If a facility discharges storm water at multiple locations, the Discharger may sample a reduced number of locations if it establishes and documents through the monitoring program that storm water discharges from different locations are substantially identical.

v. Records of all storm water monitoring information and copies of all reports required by the permit shall be retained for a period of at least three years from the date of sample, observation, or report.

d. Receiving Water Monitoring

The requirements of this section only apply when the MRP requires receiving water sampling.

i. Receiving water samples shall be collected on days coincident with effluent sampling for conventional pollutants.

ii. Receiving water samples shall be collected at each station on each sampling day during the period within one hour following low slack water. Where sampling during lower slack water is impractical, sampling shall be performed during higher slack water. Samples shall be collected within the discharge plume and down current of the discharge point so as to be representative, unless otherwise stipulated in the MRP.

iii. Samples shall be collected within one foot of the surface of the receiving water, unless otherwise stipulated in the MRP.

B. Biosolids Monitoring – This section supplements III.B of Standard Provisions (Attachment D)

When biosolids are sent to a landfill, sent to a surface disposal site, or applied to land as a soil amendment, they must be monitored as follows:

1. Biosolids Monitoring Frequency

Biosolids disposal must be monitored at the following frequency:

Metric tons biosolids/365 days	**Frequency**
0-290	Once per year
290-1500	Quarterly
1500-15,000	Six times per year
Over 15,000	Once per month

(Metric tons are on a dry weight basis)

2. Biosolids Pollutants to Monitor

Biosolids shall be monitored for the following constituents:

Land Application: arsenic, cadmium, chromium, copper, mercury, molybdenum, nickel, lead, selenium, and zinc

Municipal Landfill: Paint filter test (pursuant to 40 CFR 258)

Biosolids-only Landfill or Surface Disposal Site (if no liner and leachate system): arsenic, chromium, and nickel

C. Standard Observations – This section is an addition to III of Standard Provisions (Attachment D)

1. Receiving Water Observations

The requirements of this section only apply when the MRP requires standard observations of the receiving water. Standard observations shall include the following:

a. *Floating and suspended materials* (e.g., oil, grease, algae, and other macroscopic particulate matter): presence or absence, source, and size of affected area.

b. *Discoloration and turbidity*: description of color, source, and size of affected area.

c. *Odor*: presence or absence, characterization, source, distance of travel, and wind direction.

d. *Beneficial water use*: presence of water-associated waterfowl or wildlife, fisherpeople, and other recreational activities in the vicinity of each sampling station.

e. *Hydrographic condition*: time and height of corrected high and low tides (corrected to nearest National Oceanic and Atmospheric Administration location for the sampling date and time of sample collection).

f. *Weather conditions*:

1) Air temperature; and

2) Total precipitation during the five days prior to observation.

2. Wastewater Effluent Observations

The requirements of this section only apply when the MRP requires wastewater effluent standard observations. Standard observations shall include the following:

a. *Floating and suspended material of wastewater origin* (e.g., oil, grease, algae, and other macroscopic particulate matter): presence or absence.

b. *Odor*: presence or absence, characterization, source, distance of travel, and wind direction.

3. Beach and Shoreline Observations

The requirements of this section only apply when the MRP requires beach and shoreline standard observations. Standard observations shall include the following:

a. *Material of wastewater origin*: presence or absence, description of material, estimated size of affected area, and source.

b. *Beneficial use*: estimate number of people participating in recreational water contact, non-water contact, or fishing activities.

4. Land Retention or Disposal Area Observations

The requirements of this section only apply to facilities with on-site surface impoundments or disposal areas that are in use. This section applies to both liquid and solid wastes, whether confined or unconfined. The Discharger shall conduct the following for each impoundment:

a. Determine the amount of freeboard at the lowest point of dikes confining liquid wastes.

b. Report evidence of leaching liquid from area of confinement and estimated size of affected area. Show affected area on a sketch and volume of flow (e.g., gallons per minute [gpm]).

c. Regarding odor, describe presence or absence, characterization, source, distance of travel, and wind direction.

d. Estimate number of waterfowl and other water-associated birds in the disposal area and vicinity.

5. Periphery of Waste Treatment and/or Disposal Facilities Observations

The requirements of this section only apply when the MRP specifies periphery standard observations. Standard observations shall include the following:

a. *Odor*: presence or absence, characterization, source, and distance of travel.

b. *Weather conditions*: wind direction and estimated velocity.

IV. STANDARD PROVISIONS – RECORDS

A. Records to be Maintained – This supplements IV.A of Standard Provisions (Attachment D)

The Discharger shall maintain records in a manner and at a location (e.g., wastewater treatment plant or Discharger offices) such that the records are accessible to Regional Water Board staff. The minimum period of retention specified in Section IV, Records, of the Federal Standard Provisions shall be extended during the course of any unresolved litigation regarding the subject discharge, or when requested by the Regional Water Board or Regional Administrator of USEPA, Region IX.

A copy of the permit shall be maintained at the discharge facility and be available at all times to operating personnel.

B. Records of monitoring information shall include – This supplements IV.B of Standard Provision (Attachment D)

1. Analytical Information

Records shall include analytical method detection limits, minimum levels, reporting levels, and related quantification parameters**.**

2. Flow Monitoring Data

For all required flow monitoring (e.g., influent and effluent flows), the additional records shall include the following, unless otherwise stipulated by the MRP:

a. Total volume for each day; and

b. Maximum, minimum, and average daily flows for each calendar month.

3. Wastewater Treatment Process Solids

a. For each treatment unit process that involves solids removal from the wastewater stream, records shall include the following:

1) Total volume or mass of solids removed from each unit (e.g., grit, skimmings, undigested biosolids) for each calendar month or other time period as appropriate, but not to exceed annually; and

2) Final disposition of such solids (e.g., landfill, other subsequent treatment unit).

b. For final dewatered biosolids from the treatment plant as a whole, records shall include the following:

1) Total volume or mass of dewatered biosolids for each calendar month;

2) Solids content of the dewatered biosolids; and

3) Final disposition of dewatered biosolids (disposal location and disposal method).

4. Disinfection Process

For the disinfection process, these additional records shall be maintained documenting process operation and performance:

a. For bacteriological analyses:

1) Wastewater flow rate at the time of sample collection; and

2) Required statistical parameters for cumulative bacterial values (e.g., moving median or geometric mean for the number of samples or sampling period identified in this Order).

b. For the chlorination process, when chlorine is used for disinfection, at least daily average values for the following:

1) Chlorine residual of treated wastewater as it enters the contact basin (mg/L);

2) Chlorine dosage (kg/day); and

3) Dechlorination chemical dosage (kg/day).

5. **Treatment Process Bypasses**

A chronological log of all treatment process bypasses, including wet weather blending, shall include the following:

a. Identification of the treatment process bypassed;

b. Dates and times of bypass beginning and end;

c. Total bypass duration;

d. Estimated total bypass volume; and

e. Description of, or reference to other reports describing, the bypass event, the cause, the corrective actions taken (except for wet weather blending that is in compliance with permit conditions), and any additional monitoring conducted.

6. **Treatment Facility Overflows**

This section applies to records for overflows at the treatment facility. This includes the headworks and all units and appurtenances downstream. The Discharger shall retain a chronological log of overflows at the treatment facility and records supporting the information provided in section V.E.2.

C. Claims of Confidentiality – Not Supplemented

V. STANDARD PROVISIONS – REPORTING

A. Duty to Provide Information – Not Supplemented

B. Signatory and Certification Requirements – Not Supplemented

C. Monitoring Reports – This section supplements V.C of Standard Provisions (Attachment D)

1. Self-Monitoring Reports

For each reporting period established in the MRP, the Discharger shall submit an SMR to the Regional Water Board in accordance with the requirements listed in this document and at the frequency the MRP specifies. The purpose of the SMR is to document treatment performance, effluent quality, and compliance with the waste discharge requirements of this Order.

a. Transmittal letter

Each SMR shall be submitted with a transmittal letter. This letter shall include the following:

1) Identification of all violations of effluent limits or other waste discharge requirements found during the reporting period;

2) Details regarding violations: parameters, magnitude, test results, frequency, and dates;

3) Causes of violations;

4) Discussion of corrective actions taken or planned to resolve violations and prevent recurrences, and dates or time schedule of action implementation (if previous reports have been submitted that address corrective actions, reference to the earlier reports is satisfactory);

5) Data invalidation (Data should not be submitted in an SMR if it does not meet quality assurance/quality control standards. However, if the Discharger wishes to invalidate any measurement after it was submitted in an SMR, a letter shall identify the measurement suspected to be invalid and state the Discharger's intent to submit, within 60 days, a formal request to invalidate the measurement. This request shall include the original measurement in question, the reason for invalidating the measurement, all relevant documentation that supports invalidation [e.g., laboratory sheet, log entry, test results, etc.], and discussion of the corrective actions taken or planned [with a time schedule for completion] to prevent recurrence of the sampling or measurement problem.);

6) If the Discharger blends, the letter shall describe the duration of blending events and certify whether blended effluent was in compliance with the conditions for blending; and

7) Signature (The transmittal letter shall be signed according to Section V.B of this Order, Attachment D – Standard Provisions.).

b. Compliance evaluation summary

Each report shall include a compliance evaluation summary. This summary shall include each parameter for which the permit specifies effluent limits, the number of samples taken during the monitoring period, and the number of samples that exceed applicable effluent limits.

c. Results of analyses and observations

1) Tabulations of all required analyses and observations, including parameter, date, time, sample station, type of sample, test result, method detection limit, method minimum level, and method reporting level, if applicable, signed by the laboratory director or other responsible official.

2) When determining compliance with an average monthly effluent limitation and more than one sample result is available in a month, the Discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of detected but not quantified (DNQ) or nondetect (ND). In those cases, the Discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:

i. The data set shall be ranked from low to high, reported ND determinations lowest, DNQ determinations next, followed by quantified values (if any). The order of the individual ND or DNQ determinations is unimportant.

ii. The median value of the data set shall be determined. If the data set has an odd number of data points, then the median is the middle value. If the data set has an even number of data points, then the median is the average of the two values around the middle unless one or both of the points are ND or DNQ, in which case the median value shall be the lower of the two data points where DNQ is lower than a value and ND is lower than DNQ.

If a sample result, or the arithmetic mean or median of multiple sample results, is below the reporting limit, and there is evidence that the priority pollutant is present in the effluent above an effluent limitation and the Discharger conducts a Pollutant Minimization Program, the Discharger shall not be deemed out of compliance.

3) Dioxin-TEQ Reporting: The Discharger shall report for each dioxin and furan congener the analytical results of effluent monitoring, including the quantifiable limit (reporting level), and the method detection limit, and the measured concentration. Estimated concentrations shall be reported for individual congeners, but shall be set equal to zero in determining the dioxin-TEQ value. The Discharger shall multiply each measured or estimated congener concentration by its respective toxicity equivalency factor (TEF) shown in Table A and report the sum of these values.

Table A: Toxic Equivalency Factors for 2,3,7,8-TCDD Equivalents

Congener	**TEF**
2,3,7,8-TetraCDD	1
1,2,3,7,8-PentaCDD	1.0
1,2,3,4,7,8-HexaCDD	0.1
1,2,3,6,7,8-HexaCDD	0.1
1,2,3,7,8,9-HexaCDD	0.1
1,2,3,4,6,7,8-HeptaCDD	0.01
OctaCDD	0.0001
2,3,7,8-TetraCDF	0.1
1,2,3,7,8-PentaCDF	0.05
2,3,4,7,8-PentaCDF	0.5
1,2,3,4,7,8-HexaCDF	0.1
1,2,3,6,7,8-HexaCDF	0.1
1,2,3,7,8,9-HexaCDF	0.1
2,3,4,6,7,8-HexaCDF	0.1
1,2,3,4,6,7,8-HeptaCDF	0.01
1,2,3,4,7,8,9-HeptaCDF	0.01
OctaCDF	0.0001

d. Data reporting for results not yet available

The Discharger shall make all reasonable efforts to obtain analytical data for required parameter sampling in a timely manner. Certain analyses require additional time to complete analytical processes and report results. For cases where required monitoring parameters require additional time to complete analytical processes and reports, and results are not available in time to be included in the SMR for the subject monitoring period, the Discharger shall describe such circumstances in the SMR and include the data for these parameters and relevant discussions of any observed exceedances in the next SMR due after the results are available.

e. Flow data

The Discharger shall provide flow data tabulation pursuant to Section IV.B.2.

f. Annual self-monitoring report requirements

By the date specified in the MRP, the Discharger shall submit an annual report to the Regional Water Board covering the previous calendar year. The report shall contain the following:

1) Annual compliance summary table of treatment plant performance, including documentation of any blending events;

2) Comprehensive discussion of treatment plant performance and compliance with the permit (This discussion shall include any corrective actions taken or planned, such as changes to facility equipment or operation practices that may be needed to achieve compliance, and any other actions taken or planned that are intended to improve performance and reliability of the Discharger's wastewater collection, treatment, or disposal practices.);

3) Both tabular and graphical summaries of the monitoring data for the previous year if parameters are monitored at a frequency of monthly or greater;

4) List of approved analyses, including the following:

(i) List of analyses for which the Discharger is certified;

(ii) List of analyses performed for the Discharger by a separate certified laboratory and copies of reports signed by the laboratory director of that laboratory shall not be submitted but retained onsite;

(iii) List of "waived" analyses, as approved;

5) Plan view drawing or map showing the Discharger's facility, flow routing, and sampling and observation station locations;

6) Results of annual facility inspection to verify that all elements of the SWPP Plan are accurate and up to date (only required if the Discharger does not route all storm water to the headworks of its wastewater treatment plant); and

7) Results of facility report reviews (The Discharger shall regularly review, revise, and update, as necessary, the O&M Manual, the Contingency Plan, the Spill Prevention Plan, and Wastewater Facilities Status Report so that these documents remain useful and relevant to current practices. At a minimum, reviews shall be conducted annually. The Discharger shall include, in each Annual Report, a description or summary of review and evaluation procedures, recommended or planned actions, and an estimated time schedule for implementing these actions. The Discharger shall complete changes to these documents to ensure they are up-to-date.).

g. Report submittal

The Discharger shall submit SMRs to:

California Regional Water Quality Control Board
San Francisco Bay Region
1515 Clay Street, Suite 1400
Oakland, CA 94612
Attn: NPDES Wastewater Division

h. Reporting data in electronic format

The Discharger has the option to submit all monitoring results in an electronic reporting format approved by the Executive Officer. If the Discharger chooses to submit SMRs electronically, the following shall apply:

1) *Reporting Method*: The Discharger shall submit SMRs electronically via a process approved by the Executive Officer (see, for example, the letter dated December 17, 1999, "Official Implementation of Electronic Reporting System [ERS]" and the progress report letter dated December 17, 2000).

2) *Monthly or Quarterly Reporting Requirements*: For each reporting period (monthly or quarterly as specified in the MRP), the Discharger shall submit an electronic SMR to the Regional Water Board in accordance with the provisions of Section V.C.1.a-e, except for requirements under Section V.C.1.c(1) where ERS does not have fields for dischargers to input certain information (e.g., sample time). However, until USEPA approves the electronic signature or other signature technologies, Dischargers that use ERS shall submit a hard copy of the original transmittal letter, an ERS printout of the data sheet, and a violation report (a receipt of the electronic transmittal shall be retained by the Discharger). This electronic SMR submittal suffices for the signed tabulations specified under Section V.C.1.c(1).

3) *Annual Reporting Requirements*: Dischargers who have submitted data using the ERS for at least one calendar year are exempt from submitting the portion of the annual report required under Section V.C.1.f(1) and (3).

D. Compliance Schedules – Not supplemented

E. Twenty-Four Hour Reporting – This section supplements V.E of Standard Provision (Attachment D)

1. Spill of Oil or Other Hazardous Material Reports

a. Within 24 hours of becoming aware of a spill of oil or other hazardous material that is not contained onsite and completely cleaned up, the Discharger shall report by telephone to the Regional Water Board at (510) 622-2369.

b. The Discharger shall also report such spills to the State Office of Emergency Services [telephone (800) 852-7550] only when the spills are in accordance with applicable reporting quantities for hazardous materials.

c. The Discharger shall submit a written report to the Regional Water Board within five working days following telephone notification unless directed otherwise by Regional Water Board staff. A report submitted electronically is acceptable. The written report shall include the following:

1) Date and time of spill, and duration if known;

2) Location of spill (street address or description of location);

3) Nature of material spilled;

4) Quantity of material involved;

5) Receiving water body affected, if any;

6) Cause of spill;

7) Estimated size of affected area;

8) Observed impacts to receiving waters (e.g., oil sheen, fish kill, water discoloration);

9) Corrective actions taken to contain, minimize, or clean up the spill;

10) Future corrective actions planned to be taken to prevent recurrence, and schedule of implementation; and

11) Persons or agencies notified.

2. Unauthorized Discharges from Municipal Wastewater Treatment Plants[1]

The following requirements apply to municipal wastewater treatment plants that experience an unauthorized discharge at their treatment facilities and are consistent with and supercede requirements imposed on the Discharger by the Executive Officer by letter of May 1, 2008, issued pursuant to California Water Code Section 13383.

a. Two (2)-Hour Notification

For any unauthorized discharges that result in a discharge to a drainage channel or a surface water, the Discharger shall, as soon as possible, but not later than two (2) hours after becoming aware of the discharge, notify the State Office of Emergency Services (telephone 800-852-7550), the local health officers or directors of environmental health with jurisdiction over the affected water bodies, and the Regional Water Board. The notification to the Regional Water Board shall be via the Regional Water Board's online reporting system at www.wbers.net, and shall include the following:

[1] California Code of Regulations, Title 23, Section 2250(b), defines an unauthorized discharge to be a discharge, not regulated by waste discharge requirements, of treated, partially treated, or untreated wastewater resulting from the intentional or unintentional diversion of wastewater from a collection, treatment or disposal system.

1) Incident description and cause;

2) Location of threatened or involved waterway(s) or storm drains;

3) Date and time the unauthorized discharge started;

4) Estimated quantity and duration of the unauthorized discharge (to the extent known), and the estimated amount recovered;

5) Level of treatment prior to discharge (e.g., raw wastewater, primary treated, undisinfected secondary treated, and so on); and

6) Identity of the person reporting the unauthorized discharge.

b. 24-hour Certification

Within 24 hours, the Discharger shall certify to the Regional Water Board, at www.wbers.net, that the State Office of Emergency Services and the local health officers or directors of environmental health with jurisdiction over the affected water bodies have been notified of the unauthorized discharge.

c. 5-Day Written Report

Within five business days, the Discharger shall submit a written report, via the Regional Water Board's online reporting system at www.wbers.net, that includes, in addition to the information required above, the following:

1) Methods used to delineate the geographical extent of the unauthorized discharge within receiving waters;

2) Efforts implemented to minimize public exposure to the unauthorized discharge;

3) Visual observations of the impacts (if any) noted in the receiving waters (e.g., fish kill, discoloration of water) and the extent of sampling if conducted;

4) Corrective measures taken to minimize the impact of the unauthorized discharge;

5) Measures to be taken to minimize the chances of a similar unauthorized discharge occurring in the future;

6) Summary of Spill Prevention Plan or O&M Manual modifications to be made, if necessary, to minimize the chances of future unauthorized discharges; and

7) Quantity and duration of the unauthorized discharge, and the amount recovered.

d. Communication Protocol

To clarify the multiple levels of notification, certification, and reporting, the current communication requirements for unauthorized discharges from municipal wastewater treatment plants are summarized in Table B that follows.

F. Planned Changes – Not supplemented

G. Anticipated Noncompliance – Not supplemented

H. Other Noncompliance – Not supplemented

I. Other Information – Not supplemented

VI. STANDARD PROVISIONS – ENFORCEMENT – Not Supplemented

VII. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS – Not Supplemented

Table B

Summary of Communication Requirements for Unauthorized Discharges[1] from Municipal Wastewater Treatment Plants

Discharger is required to:	Agency Receiving Information	Time frame	Method for Contact
1. Notify	State Office of Emergency Services (OES)	As soon as possible, but not later than **2 hours** after becoming aware of the unauthorized discharge.	Telephone – (800) 852-7550 (obtain a control number from OES)
	Local health department	As soon as possible, but not later than **2 hours** after becoming aware of the unauthorized discharge.	Depends on local health department
	Regional Water Board	As soon as possible, but not later than **2 hours** after becoming aware of the unauthorized discharge.	Electronic[2] www.wbers.net
2. Certify	Regional Water Board	As soon as possible, but not later than **24 hours** after becoming aware of the unauthorized discharge.	Electronic[3] www.wbers.net
3. Report	Regional Water Board	Within **5 business days** of becoming aware of the unauthorized discharge.	Electronic[4] www.wbers.net

[1] California Code of Regulations, Title 23, Section 2250(b), defines an unauthorized discharge to be a discharge, not regulated by waste discharge requirements, of treated, partially treated, or untreated wastewater resulting from the intentional or unintentional diversion of wastewater from a collection, treatment or disposal system.

[2] In the event that the Discharger is unable to provide online notification within 2 hours of becoming aware of an unauthorized discharge, it shall phone the Regional Water Board's spill hotline at (510) 622-2369 and convey the same information contained in the notification form. In addition, within 3 business days of becoming aware of the unauthorized discharge, the Discharger shall enter the notification information into the Regional Water Board's online system in electronic format.

[3] In most instances, the 2-hour notification will also satisfy 24-hour certification requirements. This is because the notification form includes fields for documenting that OES and the local health department have been contacted. In other words, if the Discharger is able to complete all the fields in the notification form within 2 hours, certification requirements are also satisfied. In the event that the Discharger is unable to provide online certification within 24 hours of becoming aware of an unauthorized discharge, it shall phone the Regional Water Board's spill hotline at (510) 622-2369 and convey the same information contained in the certification form. In addition, within 3 business days of becoming aware of the unauthorized discharge, the Discharger shall enter the certification information into the Regional Water Board's online system in electronic format.

[4] If the Discharger cannot satisfy the 5-day reporting requirements via the Regional Water Board's online reporting system, it shall submit a written report (preferably electronically in pdf) to the appropriate Regional Water Board case manager. In cases where the Discharger cannot satisfy the 5-day reporting requirements via the online reporting system, it must still complete the Regional Water Board's online reporting requirements within 15 calendar days of becoming aware of the unauthorized discharge.

VIII. DEFINITIONS – This section is an addition to Standard Provisions (Attachment D)

More definitions can be found in Attachment A of this NPDES Permit.

1. Arithmetic Calculations

   a. Geometric mean is the antilog of the log mean or the back-transformed mean of the logarithmically transformed variables, which is equivalent to the multiplication of the antilogarithms. The geometric mean can be calculated with either of the following equations:

   $$\text{Geometric Mean} = Anti\log\left(\frac{1}{N}\sum_{i=1}^{N} Log(C_i)\right)$$

   or

   $$\text{Geometric Mean} = (C_1 * C_2 * \ldots * C_N)^{1/N}$$

   Where "N" is the number of data points for the period analyzed and "C" is the concentration for each of the "N" data points.

   b. Mass emission rate is obtained from the following calculation for any calendar day:

   $$\text{Mass emission rate (lb/day)} = \frac{8.345}{N}\sum_{i=1}^{N} Q_i C_i$$

   $$\text{Mass emission rate (kg/day)} = \frac{3.785}{N}\sum_{i=1}^{N} Q_i C_i$$

   In which "N" is the number of samples analyzed in any calendar day and "Q_i" and "C_i" are the flow rate (MGD) and the constituent concentration (mg/L) associated with each of the "N" grab samples that may be taken in any calendar day. If a composite sample is taken, "C_i" is the concentration measured in the composite sample and "Q_i" is the average flow rate occurring during the period over which the samples are composited. The daily concentration of a constituent measured over any calendar day shall be determined from the flow-weighted average of the same constituent in the combined waste streams as follows:

   $$C_d = \text{Average daily concentration} = \frac{1}{Q_t}\sum_{i=1}^{N} Q_i C_i$$

   In which "N" is the number of component waste streams and "Q" and "C" are the flow rate (MGD) and the constituent concentration (mg/L) associated with each of the "N" waste streams. "Q_t" is the total flow rate of the combined waste streams.

   c. Maximum allowable mass emission rate, whether for a 24-hour, weekly 7-day, monthly 30-day, or 6-month period, is a limitation expressed as a daily rate determined with the

formulas in the paragraph above, using the effluent concentration limit specified in the permit for the period and the specified allowable flow.

d. POTW removal efficiency is the ratio of pollutants removed by the treatment facilities to pollutants entering the treatment facilities (expressed as a percentage). The Discharger shall determine removal efficiencies using monthly averages (by calendar month unless otherwise specified) of pollutant concentration of influent and effluent samples collected at about the same time and using the following equation (or its equivalent):

Removal Efficiency (%) = 100 × [1-(Effluent Concentration/Influent Concentration)]

2. Biosolids means the solids, semi-liquid suspensions of solids, residues, screenings, grit, scum, and precipitates separated from or created in wastewater by the unit processes of a treatment system. It also includes, but is not limited to, all supernatant, filtrate, centrate, decantate, and thickener overflow and underflow in the solids handling parts of the wastewater treatment system.

3. Blending is the practice of recombining wastewater that has been biologically treated with wastewater that has bypassed around biological treatment units.

4. Bottom sediment sample is (1) a separate grab sample taken at each sampling station for the determination of selected physical-chemical parameters, or (2) four grab samples collected from different locations in the immediate vicinity of a sampling station while the boat is anchored and analyzed separately for macroinvertebrates.

5. Composite sample is a sample composed of individual grab samples collected manually or by an automatic sampling device on the basis of time or flow as specified in the MRP. For flow-based composites, the proportion of each grab sample included in the composite sample shall be within plus or minus five percent (+/-5%) of the representative flow rate of the waste stream being measured at the time of grab sample collection. Alternatively, equal volume grab samples may be individually analyzed with the flow-weighted average calculated by averaging flow-weighted ratios of each grab sample analytical result. Grab samples comprising time-based composite samples shall be collected at intervals not greater than those specified in the MRP. The quantity of each grab sample comprising a time-based composite sample shall be a set of flow proportional volumes as specified in the MRP. If a particular time-based or flow-based composite sampling protocol is not specified in the MRP, the Discharger shall determine and implement the most representative sampling protocol for the given parameter subject to Executive Officer approval.

6. Depth-integrated sample is defined as a water or waste sample collected by allowing a sampling device to fill during a vertical traverse in the waste or receiving water body being sampled. The Discharger shall collect depth-integrated samples in such a manner that the collected sample will be representative of the waste or water body at that sampling point.

7. Flow sample is an accurate measurement of the average daily flow volume using a properly calibrated and maintained flow measuring device.

8. Grab sample is an individual sample collected in a short period of time not exceeding 15 minutes. Grab samples represent only the condition that exists at the time the wastewater is collected.

9. Initial dilution is the process that results in the rapid and irreversible turbulent mixing of wastewater with receiving water around the point of discharge.

10. Overflow is the intentional or unintentional spilling or forcing out of untreated or partially treated wastes from a transport system (e.g., through manholes, at pump stations, and at collection points) upstream from the treatment plant headworks or from any part of a treatment plant facility.

11. Priority pollutants are those constituents referred to in 40 CFR Part 122 as promulgated in the Federal Register, Vol. 65, No. 97, Thursday, May 18, 2000, also known as the California Toxics Rule, the presence or discharge of which could reasonably be expected to interfere with maintaining designated uses.

12. Storm water means storm water runoff, snow melt runoff, and surface runoff and drainage. It excludes infiltration and runoff from agricultural land.

13. Toxic pollutant means any pollutant listed as toxic under federal Clean Water Act section 307(a)(1) or under 40 CFR 401.15.

14. Untreated waste is raw wastewater.

15. Waste, waste discharge, discharge of waste, and discharge are used interchangeably in the permit. The requirements of the permit apply to the entire volume of water, and the material therein, that is disposed of to surface and ground waters of the State of California.

Table C

List of Monitoring Parameters and Analytical Methods

CTR No.	Pollutant/Parameter	Analytical Method[1]	Minimum Levels[2] (µg/l)											
			GC	GCMS	LC	Color	FAA	GFAA	ICP	ICP MS	SPGFAA	HYD RIDE	CVAA	DCP
1.	Antimony	204.2					10	5	50	0.5	5	0.5		1000
2.	Arsenic	206.3				20		2	10	2	2	1		1000
3.	Beryllium						20	0.5	2	0.5	1			1000
4.	Cadmium	200 or 213				10	0.5	10	0.25	0.5				1000
5a.	Chromium (III)	SM 3500												
5b.	Chromium (VI)	SM 3500				10	5							1000
6.	Copper	200.9					25	5	10	0.5	2			1000
7.	Lead	200.9					20	5	5	0.5	2			10,000
8.	Mercury	1631 (note)[3]												
9.	Nickel	249.2					50	5	20	1	5			1000
10.	Selenium	200.8 or SM 3114B or C						5	10	2	5	1		1000
11.	Silver	272.2					10	1	10	0.25	2			1000
12.	Thallium	279.2					10	2	10	1	5			1000
13.	Zinc	200 or 289					20		20	1	10			
14.	Cyanide	SM 4500 CN^- C or I				5								
15.	Asbestos (only required for dischargers to MUN waters)[4]	0100.2 [5]												
16.	2,3,7,8-TCDD and 17 congeners (Dioxin)	1613												
17.	Acrolein	603	2.0	5										
18.	Acrylonitrile	603	2.0	2										
19.	Benzene	602	0.5	2										
33.	Ethylbenzene	602	0.5	2										

[1] The suggested method is the USEPA Method unless otherwise specified (SM = Standard Methods). The discharger may use another USEPA-approved or recognized method if that method has a level of quantification below the applicable water quality objective. Where no method is suggested, the Discharger has the discretion to use any standard method.

[2] Minimum levels are from the *State Implementation Policy*. They are the concentration of the lowest calibration standard for that technique based on a survey of contract laboratories. Laboratory techniques are defined as follows: GC = Gas Chromatography; GCMS = Gas Chromatography/Mass Spectrometry; LC = High Pressure Liquid Chromatography; Color = Colorimetric; FAA = Flame Atomic Absorption; GFAA = Graphite Furnace Atomic Absorption; ICP = Inductively Coupled Plasma; ICPMS = Inductively Coupled Plasma/Mass Spectrometry; SPGFAA = Stabilized Platform Graphite Furnace Atomic Absorption (i.e., U.S. EPA 200.9); Hydride = Gaseous Hydride Atomic Absorption; CVAA = Cold Vapor Atomic Absorption; DCP = Direct Current Plasma.

[3] The Discharger shall use ultra-clean sampling (USEPA Method 1669) and ultra-clean analytical methods (USEPA Method 1631) for mercury monitoring. The minimum level for mercury is 2 ng/l (or 0.002 ug/l).

[4] MUN = Municipal and Domestic Supply. This designation, if applicable, is in the Findings of the permit.

[5] *Determination of Asbestos Structures over 10 [micrometers] in Length in Drinking Water Using MCE Filters*, U.S. EPA 600/R-94-134, June 1994.

CTR No.	Pollutant/Parameter	Analytical Method[1]	Minimum Levels[2] (µg/l)											
			GC	GCMS	LC	Color	FAA	GFAA	ICP	ICP MS	SPGFAA	HYD RIDE	CVAA	DCP
39.	Toluene	602	0.5	2										
20.	Bromoform	601	0.5	2										
21.	Carbon Tetrachloride	601	0.5	2										
22.	Chlorobenzene	601	0.5	2										
23.	Chlorodibromomethane	601	0.5	2										
24.	Chloroethane	601	0.5	2										
25.	2-Chloroethylvinyl Ether	601	1	1										
26.	Chloroform	601	0.5	2										
75.	1,2-Dichlorobenzene	601	0.5	2										
76.	1,3-Dichlorobenzene	601	0.5	2										
77.	1,4-Dichlorobenzene	601	0.5	2										
27.	Dichlorobromomethane	601	0.5	2										
28.	1,1-Dichloroethane	601	0.5	1										
29.	1,2-Dichloroethane	601	0.5	2										
30.	1,1-Dichloroethylene or 1,1-Dichloroethene	601	0.5	2										
31.	1,2-Dichloropropane	601	0.5	1										
32.	1,3-Dichloropropylene or 1,3-Dichloropropene	601	0.5	2										
34.	Methyl Bromide or Bromomethane	601	1.0	2										
35.	Methyl Chloride or Chloromethane	601	0.5	2										
36.	Methylene Chloride or Dichlorormethane	601	0.5	2										
37.	1,1,2,2-Tetrachloroethane	601	0.5	1										
38.	Tetrachloroethylene	601	0.5	2										
40.	1,2-Trans-Dichloroethylene	601	0.5	1										
41.	1,1,1-Trichloroethane	601	0.5	2										
42.	1,1,2-Trichloroethane	601	0.5	2										
43.	Trichloroethene	601	0.5	2										
44.	Vinyl Chloride	601	0.5	2										
45.	2-Chlorophenol	604	2	5										
46.	2,4-Dichlorophenol	604	1	5										
47.	2,4-Dimethylphenol	604	1	2										
48.	2-Methyl-4,6-Dinitrophenol or Dinitro-2-methylphenol	604	10	5										
49.	2,4-Dinitrophenol	604	5	5										
50.	2-Nitrophenol	604		10										
51.	4-Nitrophenol	604	5	10										
52.	3-Methyl-4-Chlorophenol	604	5	1										
53.	Pentachlorophenol	604	1	5										
54.	Phenol	604	1	1		50								
55.	2,4,6-Trichlorophenol	604	10	10										
56.	Acenaphthene	610 HPLC	1	1	0.5									
57.	Acenaphthylene	610 HPLC		10	0.2									
58.	Anthracene	610 HPLC		10	2									
60.	Benzo(a)Anthracene or 1,2 Benzanthracene	610 HPLC	10	5										
61.	Benzo(a)Pyrene	610 HPLC		10	2									
62.	Benzo(b)Fluoranthene or 3,4 Benzofluoranthene	610 HPLC		10	10									

CTR No.	Pollutant/Parameter	Analytical Method[1]	Minimum Levels[2] (µg/l)											
			GC	GCMS	LC	Color	FAA	GFAA	ICP	ICP MS	SPGFAA	HYD RIDE	CVAA	DCP
63.	Benzo(ghi)Perylene	610 HPLC		5	0.1									
64.	Benzo(k)Fluoranthene	610 HPLC		10	2									
74.	Dibenzo(a,h)Anthracene	610 HPLC		10	0.1									
86.	Fluoranthene	610 HPLC	10	1	0.05									
87.	Fluorene	610 HPLC		10	0.1									
92.	Indeno(1,2,3-cd) Pyrene	610 HPLC		10	0.05									
100.	Pyrene	610 HPLC		10	0.05									
68.	Bis(2-Ethylhexyl)Phthalate	606 or 625	10	5										
70.	Butylbenzyl Phthalate	606 or 625	10	10										
79.	Diethyl Phthalate	606 or 625	10	2										
80.	Dimethyl Phthalate	606 or 625	10	2										
81.	Di-n-Butyl Phthalate	606 or 625		10										
84.	Di-n-Octyl Phthalate	606 or 625		10										
59.	Benzidine	625		5										
65.	Bis(2-Chloroethoxy)Methane	625		5										
66.	Bis(2-Chloroethyl)Ether	625	10	1										
67.	Bis(2-Chloroisopropyl)Ether	625	10	2										
69.	4-Bromophenyl Phenyl Ether	625	10	5										
71.	2-Chloronaphthalene	625		10										
72.	4-Chlorophenyl Phenyl Ether	625		5										
73.	Chrysene	625		10	5									
78.	3,3'-Dichlorobenzidine	625		5										
82.	2,4-Dinitrotoluene	625	10	5										
83.	2,6-Dinitrotoluene	625		5										
85.	1,2-Diphenylhydrazine (note)[6]	625		1										
88.	Hexachlorobenzene	625	5	1										
89.	Hexachlorobutadiene	625	5	1										
90.	Hexachlorocyclopentadiene	625	5	5										
91.	Hexachloroethane	625	5	1										
93.	Isophorone	625	10	1										
94.	Naphthalene	625	10	1	0.2									
95.	Nitrobenzene	625	10	1										
96.	N-Nitrosodimethylamine	625	10	5										
97.	N-Nitrosodi-n-Propylamine	625	10	5										
98.	N-Nitrosodiphenylamine	625	10	1										
99.	Phenanthrene	625		5	0.05									
101.	1,2,4-Trichlorobenzene	625	1	5										
102.	Aldrin	608	0.005											
103.	α-BHC	608	0.01											
104.	β-BHC	608	0.005											
105.	γ-BHC (Lindane)	608	0.02											
106.	δ-BHC	608	0.005											
107.	Chlordane	608	0.1											
108.	4,4'-DDT	608	0.01											
109.	4,4'-DDE	608	0.05											

[6] Measurement for 1,2-Diphenylhydrazine may use azobenzene as a screen: if azobenzene is measured at >1 ug/l, then the Discharger shall analyze for 1,2-Diphenylhydrazine.

CTR No.	Pollutant/Parameter	Analytical Method[1]	Minimum Levels[2] (µg/l)											
			GC	GCMS	LC	Color	FAA	GFAA	ICP	ICP MS	SPGFAA	HYD RIDE	CVAA	DCP
110.	4,4'-DDD	608	0.05											
111.	Dieldrin	608	0.01											
112.	Endosulfan (alpha)	608	0.02											
113.	Endosulfan (beta)	608	0.01											
114.	Endosulfan Sulfate	608	0.05											
115.	Endrin	608	0.01											
116.	Endrin Aldehyde	608	0.01											
117.	Heptachlor	608	0.01											
118.	Heptachlor Epoxide	608	0.01											
119-125	PCBs: Aroclors 1016, 1221, 1232, 1242, 1248, 1254, 1260	608	0.5											
126.	Toxaphene	608	0.5											

ATTACHMENT H

Pretreatment Program Provisions

1. The Discharger shall implement all pretreatment requirements contained in 40 CFR 403, as amended. The Discharger shall be subject to enforcement actions, penalties, and fines as provided in the Clean Water Act (33 USC 1351 et seq.), as amended. The Discharger shall implement and enforce its Approved Pretreatment Program or modified Pretreatment Program as directed by the Regional Water Board's Executive Officer or the USEPA. The USEPA and/or the State may initiate enforcement action against an industrial user for noncompliance with applicable standards and requirements as provided in the Clean Water Act.

2. The Discharger shall enforce the requirements promulgated under Sections 307(b), 307(c), 307(d) and 402(b) of the Clean Water Act. The Discharger shall cause industrial users subject to Federal Categorical Standards to achieve compliance no later than the date specified in those requirements or, in the case of a new industrial user, upon commencement of the discharge.

3. The Discharger shall perform the pretreatment functions as required in 40 CFR Part 403 and amendments or modifications thereto including, but not limited to:

   i) Implement the necessary legal authorities to fully implement the pretreatment regulations as provided in 40 CFR 403.8(f)(1);

   ii) Implement the programmatic functions as provided in 40 CFR 403.8(f)(2);

   iii) Publish an annual list of industrial users in significant noncompliance as provided per 40 CFR 403.8(f)(2)(vii);

   iv) Provide for the requisite funding and personnel to implement the pretreatment program as provided in 40 CFR 403.8(f)(3); and

   v) Enforce the national pretreatment standards for prohibited discharges and categorical standards as provided in 40 CFR 403.5 and 403.6, respectively.

4. The Discharger shall submit annually a report to USEPA Region 9, the State Water Board and the Regional Water Board describing its pretreatment program activities over the previous twelve months. In the event that the Discharger is not in compliance with any conditions or requirements of the Pretreatment Program, the Discharger shall also include the reasons for noncompliance and a plan and schedule for achieving compliance. The report shall contain, but is not limited to, the information specified in Appendix A entitled, "Requirements for Pretreatment Annual Reports," which is made a part of this Order. The annual report is due on the last day of February each year.

5. The Discharger shall submit semiannual pretreatment reports to USEPA Region 9, the State Water Board and the Regional Water Board describing the status of its significant industrial users (SIUs). The report shall contain, but not is limited to, the information specified in Appendix B entitled, "Requirements for Semiannual Pretreatment Reports," which is made part of this Order. The semiannual reports are due July 31st (for the period January through June) and January 31st (for the period July through December) of each year. The Executive Officer may exempt a Discharger from the semiannual reporting requirements on a case by case basis subject to State Water Board and USEPA's comment and approval.

6. The Discharger may combine the annual pretreatment report with the semiannual pretreatment report (for the July through December reporting period). The combined report shall contain all of the information requested in Appendices A and B and will be due on January 31st of each year.

7. The Discharger shall conduct the monitoring of its treatment plant's influent, effluent, and sludge as described in Appendix C entitled, "Requirements for Influent, Effluent and Sludge Monitoring," which is made part of this Order. The results of the sampling and analysis, along with a discussion of any trends, shall be submitted in the semiannual reports. A tabulation of the data shall be included in the annual pretreatment report. The Executive Officer may require more or less frequent monitoring on a case by case basis.

APPENDIX A

REQUIREMENTS FOR PRETREATMENT ANNUAL REPORTS

The Pretreatment Annual Report is due each year on the last day of February. [If the annual report is combined with the semiannual report (for the July through December period) the submittal deadline is January 31st of each year.] The purpose of the Annual Report is 1) to describe the status of the Publicly Owned Treatment Works (POTW) pretreatment program and 2) to report on the effectiveness of the program, as determined by comparing the results of the preceding year's program implementation. The report shall contain at a minimum, but is not limited to, the following information:

1) Cover Sheet

The cover sheet must contain the name(s) and National Pollutant Discharge Elimination Discharge System (NPDES) permit number(s) of those POTWs that are part of the Pretreatment Program. Additionally, the cover sheet must include: the name, address and telephone number of a pretreatment contact person; the period covered in the report; a statement of truthfulness; and the dated signature of a principal executive officer, ranking elected official, or other duly authorized employee who is responsible for overall operation of the POTW (40 CFR 403.12(j)).

2) Introduction

The Introduction shall include any pertinent background information related to the Discharger, the POTW and/or the industrial user base of the area. Also, this section shall include an update on the status of any Pretreatment Compliance Inspection (PCI) tasks, Pretreatment Performance Evaluation tasks, Pretreatment Compliance Audit (PCA) tasks, Cleanup and Abatement Order (CAO) tasks, or other pretreatment-related enforcement actions required by the Regional Water Board or the USEPA. A more specific discussion shall be included in the section entitled, "Program Changes."

3) Definitions

This section shall contain a list of key terms and their definitions that the Discharger uses to describe or characterize elements of its pretreatment program.

4) Discussion of Upset, Interference and Pass Through

This section shall include a discussion of Upset, Interference or Pass Through incidents, if any, at the POTW(s) that the Discharger knows of or suspects were caused by industrial discharges. Each incident shall be described, at a minimum, consisting of the following information:

a) a description of what occurred;
b) a description of what was done to identify the source;
c) the name and address of the IU responsible
d) the reason(s) why the incident occurred;
e) a description of the corrective actions taken; and
f) an examination of the local and federal discharge limits and requirements for the purposes of determining whether any additional limits or changes to existing requirements may be necessary to prevent other Upset, Interference or Pass Through incidents.

5) Influent, Effluent and Sludge Monitoring Results

This section shall provide a summary of the analytical results from the "Influent, Effluent and Sludge Monitoring" as specified in Appendix C. The results should be reported in a summary matrix that lists monthly influent and effluent metal results for the reporting year.

A graphical representation of the influent and effluent metal monitoring data for the past five years shall also be provided with a discussion of any trends.

6) **Inspection and Sampling Program**

This section shall contain at a minimum, but is not limited to, the following information:

a) Inspections: the number of inspections performed for each type of IU; the criteria for determining the frequency of inspections; the inspection format procedures;
b) Sampling Events: the number of sampling events performed for each type of IU; the criteria for determining the frequency of sampling; the chain of custody procedures.

7) **Enforcement Procedures**

This section shall provide information as to when the approved Enforcement Response Plan (ERP) had been formally adopted or last revised. In addition, the date the finalized ERP was submitted to the Regional Water Board shall also be given.

8) **Federal Categories**

This section shall contain a list of all of the federal categories that apply to the Discharger. The specific category shall be listed including the subpart and 40 CFR section that applies. The maximum and average limits for the each category shall be provided. This list shall indicate the number of Categorical Industrial Users (CIUs) per category and the CIUs that are being regulated pursuant to the category. The information and data used to determine the limits for those CIUs for which a combined waste stream formula is applied shall also be provided.

9) **Local Standards**

This section shall include a table presenting the local limits.

10) **Updated List of Regulated SIUs**

This section shall contain a complete and updated list of the Discharger's Significant Industrial Users (SIUs), including their names, addresses, and a brief description of the individual SIU's type of business. The list shall include all deletions and additions keyed to the list as submitted in the previous annual report. All deletions shall be briefly explained.

11) **Compliance Activities**

a) **Inspection and Sampling Summary:** This section shall contain a summary of all the inspections and sampling activities conducted by the Discharger over the past year to gather information and data regarding the SIUs. The summary shall include:

(1) the number of inspections and sampling events conducted for each SIU;

(2) the quarters in which these activities were conducted; and

(3) the compliance status of each SIU, delineated by quarter, and characterized using all applicable descriptions as given below:

(a) in consistent compliance;

(b) in inconsistent compliance;

(c) in significant noncompliance;

(d) on a compliance schedule to achieve compliance, (include the date final compliance is required);

(e) not in compliance and not on a compliance schedule;

(f) compliance status unknown, and why not.

b) **Enforcement Summary:** This section shall contain a summary of the compliance and enforcement activities during the past year. The summary shall include the names of all the SIUs affected by the following actions:

(1) Warning letters or notices of violations regarding SIUs' apparent noncompliance with or violation of any federal pretreatment categorical standards and/or requirements, or local limits and/or requirements. For each notice, indicate whether it was for an infraction of a federal or local standard/limit or requirement.

(2) Administrative Orders regarding the SIUs' apparent noncompliance with or violation of any federal pretreatment categorical standards and/or requirements, or local limits and/or requirements. For each notice, indicate whether it was for an infraction of a federal or local standard/limit or requirement.

(3) Civil actions regarding the SIUs' apparent noncompliance with or violation of any federal pretreatment categorical standards and/or requirements, or local limits and/or requirements. For each notice, indicate whether it was for an infraction of a federal or local standard/limit or requirement.

(4) Criminal actions regarding the SIUs' apparent noncompliance with or violation of any federal pretreatment categorical standards and/or requirements, or local limits and/or requirements. For each notice, indicate whether it was for an infraction of a federal or local standard/limit or requirement.

(5) Assessment of monetary penalties. Identify the amount of penalty in each case and reason for assessing the penalty.

(6) Order to restrict/suspend discharge to the POTW.

(7) Order to disconnect the discharge from entering the POTW.

12) **Baseline Monitoring Report Update**

This section shall provide a list of CIUs that have been added to the pretreatment program since the last annual report. This list of new CIUs shall summarize the status of the respective Baseline Monitoring Reports (BMR). The BMR must contain all of the information specified in 40 CFR 403.12(b). For each of the new CIUs, the summary shall indicate when the BMR was due; when the CIU was notified by the POTW of this requirement; when the CIU submitted the report; and/or when the report is due.

13) **Pretreatment Program Changes**

This section shall contain a description of any significant changes in the Pretreatment Program during the past year including, but not limited to: legal authority, local limits, monitoring/ inspection program and frequency, enforcement protocol, program's administrative structure, staffing level, resource requirements and funding mechanism. If the manager of the pretreatment program changes, a revised organizational chart shall be included. If any element(s) of the program is in the process of being modified, this intention shall also be indicated.

14) **Pretreatment Program Budget**

This section shall present the budget spent on the Pretreatment Program. The budget, either by the calendar or fiscal year, shall show the amounts spent on personnel, equipment, chemical analyses and any other appropriate categories. A brief discussion of the source(s) of funding shall be provided.

15) **Public Participation Summary**

This section shall include a copy of the public notice as required in 40 CFR 403.8(f)(2)(vii). If a notice was not published, the reason shall be stated.

16) **Sludge Storage and Disposal Practice**

This section shall have a description of how the treated sludge is stored and ultimately disposed. The sludge storage area, if one is used, shall be described in detail. Its location, a description of the containment features and the sludge handling procedures shall be included.

17) **PCS Data Entry Form**

The annual report shall include the PCS Data Entry Form. This form shall summarize the enforcement actions taken against SIUs in the past year. This form shall include the following information: the POTW name, NPDES Permit number, period covered by the report, the number of SIUs in significant noncompliance (SNC) that are on a pretreatment compliance schedule, the number of notices of violation and administrative orders issued against SIUs, the number of civil and criminal judicial actions against SIUs, the number of SIUs that have been published as a result of being in SNC, and the number of SIUs from which penalties have been collected.

18) **Other Subjects**

Other information related to the Pretreatment Program that does not fit into one of the above categories should be included in this section.

Signed copies of the reports shall be submitted to the Regional Administrator at USEPA, the State Water Board and the Regional Water Board at the following addresses:

Regional Administrator
United States Environmental Protection Agency
Region 9, Mail Code: WTR-7
Clean Water Act Compliance Office
Water Division
75 Hawthorne Street
San Francisco, CA 94105

Pretreatment Program Manager
Regulatory Unit
State Water Resources Control Board
Division of Water Quality
1001 I Street
Sacramento, CA 95814

Pretreatment Coordinator
NPDES Permits Division
SF Bay Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, CA 94612

APPENDIX B:

REQUIREMENTS FOR SEMIANNUAL PRETREATMENT REPORTS

The semiannual pretreatment reports are due on July 31st (for pretreatment program activities conducted from January through June) and January 31st (for pretreatment activities conducted from July through December) of each year, unless an exception has been granted by the Regional Water Board's Executive Officer. The semiannual reports shall contain, at a minimum, but is not limited to, the following information:

1) **Influent, Effluent and Sludge Monitoring**

The influent, effluent and sludge monitoring results shall be included in the report. The analytical laboratory report shall also be included, with the QA/QC data validation provided upon request. A description of the sampling procedures and a discussion of the results shall be given. (Please see Appendix C for specific detailed requirements.) The contributing source(s) of the parameters that exceed NPDES limits shall be investigated and discussed. In addition, a brief discussion of the contributing source(s) of all organic compounds identified shall be provided.

The Discharger has the option to submit all monitoring results via an electronic reporting format approved by the Executive Officer. The procedures for submitting the data will be similar to the electronic submittal of the NPDES self-monitoring reports as outlined in the December 17, 1999 Regional Water Board letter, Official Implementation of Electronic Reporting System (ERS). The Discharger shall contact the Regional Water Board's ERS Project Manager for specific details in submitting the monitoring data.

If the monitoring results are submitted electronically, the analytical laboratory reports (along with the QA/QC data validation) should be kept at the discharger's facility.

2) **Industrial User Compliance Status**

This section shall contain a list of all Significant Industrial Users (SIUs) that were not in consistent compliance with all pretreatment standards/limits or requirements for the reporting period. The compliance status for the previous reporting period shall also be included. Once the SIU has determined to be out of compliance, the SIU shall be included in the report until consistent compliance has been achieved. A brief description detailing the actions that the SIU undertook to come back into compliance shall be provided.

For each SIU on the list, the following information shall be provided:

a. Indicate if the SIU is subject to Federal categorical standards; if so, specify the category including the subpart that applies.

b. For SIUs subject to Federal Categorical Standards, indicate if the violation is of a categorical or local standard.

c. Indicate the compliance status of the SIU for the two quarters of the reporting period.

d. For violations/noncompliance occurring in the reporting period, provide (1) the date(s) of violation(s); (2) the parameters and corresponding concentrations exceeding the limits and the discharge limits for these parameters and (3) a brief summary of the noncompliant event(s) and the steps that are being taken to achieve compliance.

3) **POTW's Compliance with Pretreatment Program Requirements**

This section shall contain a discussion of the Discharger's compliance status with the Pretreatment Program Requirements as indicated in the latest Pretreatment Compliance Audit (PCA) Report, Pretreatment Compliance Inspection (PCI) Report or Pretreatment Performance Evaluation (PPE) Report. It shall contain a summary of the following information:

a. Date of latest PCA, PCI or PPE and report.
b. Date of the Discharger's response.
c. List of unresolved issues.
d. Plan and schedule for resolving the remaining issues.

The reports shall be signed by a principal executive officer, ranking elected official, or other duly authorized employee who is responsible for the overall operation of the Publicly Owned Treatment Works (POTW) (40 CFR 403.12(j)). Signed copies of the reports shall be submitted to the Regional Administrator at USEPA, the State Water Board and the Regional Water Board at the following addresses:

Regional Administrator
United States Environmental Protection Agency
Region 9, Mail Code: WTR-7
Clean Water Act Compliance Office
Water Division
75 Hawthorne Street
San Francisco, CA 94105

Pretreatment Program Manager
Regulatory Unit
State Water Resources Control Board
Division of Water Quality
1001 I Street
Sacramento, CA 95814

Pretreatment Coordinator
NPDES Permits Division
SF Bay Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, CA 94612

APPENDIX C

REQUIREMENTS FOR INFLUENT, EFFLUENT AND SLUDGE MONITORING

The Discharger shall conduct sampling of its treatment plant's influent, effluent and sludge at the frequency as shown in Table E-5 of the Monitoring and Reporting Program (MRP, Attachment E).

The monitoring and reporting requirements of the POTW's Pretreatment Program are in addition to those specified in Table E-2 (influent) and Table E-3 (effluent) of the MRPTable 1 of the SMP. Any subsequent modifications of the requirements specified in Tables E-2 and E-3 shall be adhered to and shall not affect the requirements described in this Appendix unless written notice from the Regional Water Board is received. When sampling periods coincide, one set of test results, reported separately, may be used for those parameters that are required to be monitored by both Tables E-2 and E-3 in the Pretreatment Program. The Pretreatment Program monitoring reports shall be sent to the Pretreatment Program Coordinator.

1. **Influent and Effluent Monitoring**

The Discharger shall monitor for the parameters using the required test methods listed in Table E-5 (the pretreatment table) Any test method substitutions must have received prior written Regional Water Board approval. Influent and Effluent sampling locations shall be the same as those sites specified in the MRP.

2. **Influent and Effluent Monitoring**

The Discharger shall monitor for the parameters using the required test methods listed in Table E-5 (the pretreatment table) of the MRP. Any test method substitutions must have received prior written Regional Water Board approval. Influent and Effluent sampling locations shall be the same as those sites specified in the MRP.

The influent and effluent sampled should be taken during the same 24-hour period. All samples must be representative of daily operations. Grab samples shall be used for volatile organic compounds, cyanide and phenol. In addition, any samples for oil and grease, polychlorinated biphenyls, dioxins/furans, and polynuclear aromatic hydrocarbons shall be grab samples. For all other pollutants, 24-hour composite samples must be obtained through flow-proportioned composite sampling. Sampling and analysis shall be performed in accordance with the techniques prescribed in 40 CFR Part 136 and amendments thereto. For effluent monitoring, the reporting limits for the individual parameters shall be at or below the minimum levels (MLs) as stated in the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (2000) [also known as the State Implementation Policy (SIP)]; any revisions to the MLs shall be adhered to. If a parameter does not have a stated minimum level, then the Discharger shall conduct the analysis using the lowest commercially available and reasonably achievable detection levels.

The following standardized report format should be used for submittal of the influent and effluent monitoring report. A similar structured format may be used but will be subject to Regional Water Board approval. The monitoring reports shall be submitted with the Semiannual Reports.

A. Sampling Procedures – This section shall include a brief discussion of the sample locations, collection times, how the sample was collected (i.e., direct collection using vials or bottles, or other types of collection using devices such as automatic samplers, buckets, or beakers), types of containers used, storage procedures and holding times.

Include description of prechlorination and chlorination/dechlorination practices during the sampling periods.

B. Method of Sampling Dechlorination – A brief description of the sample dechlorination method prior to analysis shall be provided.

C. Sample Compositing – The manner in which samples are composited shall be described. If the compositing procedure is different from the test method specifications, a reason for the variation shall be provided.

D. Data Validation – All quality assurance/quality control (QA/QC) methods to be used shall be discussed and summarized. These methods include, but are not limited to, spike samples, split samples, blanks and standards. Ways in which the QA/QC data will be used to qualify the analytical test results shall be identified. A certification statement shall be submitted with this discussion stating that the laboratory QA/QC validation data has been reviewed and has met the laboratory acceptance criteria. The QA/QC validation data shall be submitted to the Regional Water Board upon request.

E. A tabulation of the test results shall be provided.

F. Discussion of Results – The report shall include a complete discussion of the test results. If any pollutants are detected in sufficient concentration to upset, interfere or pass through plant operations, the type of pollutant(s) and potential source(s) shall be noted, along with a plan of action to control, eliminate, and/or monitor the pollutant(s). Any apparent generation and/or destruction of pollutants attributable to chlorination/dechlorination sampling and analysis practices shall be noted.

3. **Sludge Monitoring**

Sludge should be sampled in the same 24-hour period during which the influent and effluent are sampled except as noted in (C) below. The same parameters required for influent and effluent analysis shall be included in the sludge analysis. The sludge analyzed shall be a composite sample of the sludge for final disposal consisting of:

A. Sludge lagoons – 20 grab samples collected at representative equidistant intervals (grid pattern) and composited as a single grab, or

B. Dried stockpile – 20 grab samples collected at various representative locations and depths and composited as a single grab, or

C. Dewatered sludge- daily composite of 4 representative grab samples each day for 5 days taken at equal intervals during the daily operating shift taken from a) the dewatering units or b) from each truckload, and shall be combined into a single 5-day composite.

The USEPA manual, POTW Sludge Sampling and Analysis Guidance Document, August 1989, containing detailed sampling protocols specific to sludge is recommended as a guidance for sampling procedures. The USEPA manual Analytical Methods of the National Sewage Sludge Survey, September 1990, containing detailed analytical protocols specific to sludge, is recommended as a guidance for analytical methods.

In determining if the sludge is a hazardous waste, the Dischargers shall adhere to Article 2, "Criteria for Identifying the Characteristics of Hazardous Waste," and Article 3, "Characteristics of Hazardous Waste," of Title 22, California Code of Regulations, Sections 66261.10 to 66261.24 and all amendments thereto.

Sludge monitoring reports shall be submitted with the appropriate Semiannual Report. The following standardized report format should be used for submittal of the report. A similarly structured form may be used but will be subject to Regional Water Board approval.

A. Sampling procedures – Include sample locations, collection procedures, types of containers used, storage/refrigeration methods, compositing techniques and holding times. Enclose a map of sample locations if sludge lagoons or stockpiled sludge is sampled.

B. Data Validation – All quality assurance/quality control (QA/QC) methods to be used shall be discussed and summarized. These methods include, but are not limited to, spike samples, split samples, blanks and standards. Ways in which the QA/QC data will be used to qualify the analytical test results shall be identified. A certification statement shall be submitted with this discussion stating that the laboratory QA/QC validation data has been reviewed and has met the laboratory acceptance criteria. The QA/QC validation data shall be submitted to the Regional Water Board upon request.

C. Test Results – Tabulate the test results and include the percent solids.

D. Discussion of Results – The report shall include a complete discussion of test results. If the detected pollutant(s) is reasonably deemed to have an adverse effect on sludge disposal, a plan of action to control, eliminate, and/or monitor the pollutant(s) and the known or potential source(s) shall be included. Any apparent generation and/or destruction of pollutants attributable to chlorination/ dechlorination sampling and analysis practices shall be noted.

The Discharger shall also provide any influent, effluent or sludge monitoring data for nonpriority pollutants that the permittee believes may be causing or contributing to Interference, Pass Through or adversely impacting sludge quality.

EXHIBIT 5

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street, San Francisco, California 94105
(415) 947-8707 • Fax (415) 947-3549
http://www.epa.gov/region9/

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION
1515 Clay Street, Suite 1400, Oakland, CA 94612
(510) 622-2300 • Fax (510) 622-2460
http://www.waterboards.ca.gov/sanfranciscobay

ORDER No. R2-2019-0028
NPDES No. CA0037681

WASTE DISCHARGE REQUIREMENTS AND NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT FOR CITY AND COUNTY OF SAN FRANCISCO OCEANSIDE WATER POLLUTION CONTROL PLANT, WASTEWATER COLLECTION SYSTEM, AND WESTSIDE RECYCLED WATER PROJECT

The following Discharger is authorized to discharge from the locations listed in Table 2 in accordance with the waste discharge requirements (WDRs) and federal National Pollutant Discharge Elimination System (NPDES) permit requirements set forth in this Order:

Table 1. Discharger Information

Discharger	City and County of San Francisco
Facility Name	Oceanside Water Pollution Control Plant, Wastewater Collection System, and Westside Recycled Water Project
Facility Address	3500 Great Highway San Francisco, CA 94132 San Francisco County
CIWQS Place Number	256498

Table 2. Discharge Locations

Discharge Point	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
001	Treated effluent, including the following: ● Secondary-treated effluent from Oceanside Water Pollution Control Plant (dry weather); ● Primary- and secondary-treated effluent from Oceanside Water Pollution Control Plant (wet weather); ● Equivalent-to-primary-treated effluent from Westside Transport/Storage Structure (wet weather); and ● Reverse osmosis concentrate from Westside Recycled Water Project, when operational (dry and wet weather).	37.70500	-122.57750	Pacific Ocean, Offshore
CSD-001	Equivalent-to-primary-treated effluent (wet weather)	37.71528	-122.50444	Pacific Ocean (Fort Funston, Ocean Beach)

Discharge Point	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
CSD-002	Equivalent-to-primary-treated effluent (wet weather)	37.73778	-122.50806	Pacific Ocean (Vicente St., Ocean Beach
CSD-003	Equivalent-to-primary-treated effluent (wet weather)	37.76389	-122.51167	Pacific Ocean (Lincoln Way, Ocean Beach)
CSD-004	Equivalent-to-primary-treated effluent (wet weather)	37.78472	-122.51028	Pacific Ocean (Mile Rock)
CSD-005	Equivalent-to-primary-treated effluent (wet weather)	37.78778	-122.49167	Pacific Ocean (China Beach)
CSD-006	Equivalent-to-primary-treated effluent (wet weather)	37.78944	-122.48778	Pacific Ocean (Baker Beach)
CSD-007	Equivalent-to-primary-treated effluent (wet weather)	37.78944	-122.48694	Pacific Ocean (Baker Beach)

Table 3. Administrative Information

The U.S. Environmental Protection Agency, Region IX, issued this Order on:	
The San Francisco Bay Regional Water Quality Control Board adopted this Order on:	September 11, 2019
This Order shall become effective on:	November 1, 2019
This Order shall expire on:	October 31, 2024
The Discharger shall file a Report of Waste Discharge as an application for reissuance of WDRs in accordance with California Code of Regulations, title 23, and an application for reissuance of a National Pollutant Discharge Elimination System (NPDES) permit no later than:	February 1, 2024
This discharge is classified as follows:	Major

The signatures below certify that this Order with all attachments is a full, true, and correct copy of the Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on the date indicated above, and an NPDES permit issued by the U.S. Environmental Protection Agency, Region IX, on the date above.

7/12/2019

Michael Montgomery, Executive Officer
San Francisco Bay Regional Water Board

Tomás Torres, Water Division Director
U.S. Environmental Protection Agency

Contents

Tables

Attachments

I. FACILITY INFORMATION

Information describing the Oceanside Water Pollution Control Plant, Wastewater Collection System, and Westside Recycled Water Project (collectively, the Facility) is summarized in Table 1 and in Fact Sheet (Attachment F) sections I and II.

II. FINDINGS

The California Regional Water Quality Control Board, San Francisco Bay Region (Regional Water Board), and the U.S. Environmental Protection Agency (U.S. EPA) find:

A. Legal Authorities. This Order serves as WDRs pursuant to California Water Code article 4, chapter 4, division 7 (commencing with § 13260). This Order is also issued pursuant to federal Clean Water Act (CWA) section 402 and implementing regulations adopted by U.S. EPA and Water Code chapter 5.5, division 7 (commencing with § 13370). It shall serve as a National Pollutant Discharge Elimination System (NPDES) permit authorizing the Discharger to discharge into waters of the United States as listed in Table 2 subject to the WDRs and NPDES permit requirements in this Order.

B. Background and Rationale for Requirements. The Regional Water Board and U.S. EPA developed the requirements in this Order based on information the Discharger submitted as part of its application, information obtained through monitoring and reporting programs, and other available information. The Fact Sheet contains background information and rationale for the requirements in this Order and is hereby incorporated into and constitutes findings for this Order. Attachments A through E, G, and H are also incorporated into this Order.

C. Notification of Interested Parties. The Regional Water Board and U.S. EPA notified the Discharger and interested agencies and persons of their intent to jointly issue WDRs and NPDES permit requirements, and provided an opportunity to submit written comments and recommendations. The Fact Sheet provides details regarding the notification.

D. Consideration of Public Comment. The Regional Water Board, in a public meeting, heard all comments pertaining to the discharge. The Fact Sheet provides details regarding the public hearing. The Regional Water Board and U.S. EPA considered all comments pertaining to the discharge.

THEREFORE, IT IS HEREBY ORDERED that Order No. R2-2009-0062 (previous order) is rescinded upon the effective date of this Order, except for enforcement purposes, and in order to meet the provisions of Water Code division 7 (commencing with § 13000) and regulations adopted thereunder and the provisions of the CWA and regulations and guidelines adopted thereunder, the Discharger shall comply with the requirements in this Order. The Regional Water Board intends that joint issuance of this Order with U.S. EPA will serve as its certification under CWA section 401 that discharges pursuant to this Order comply with 33 U.S.C. sections 1311, 1312, 1313, 1316, and 1317. This action in no way prevents the Regional Water Board or U.S. EPA from taking enforcement action for past violations of the previous order.

III. DISCHARGE PROHIBITIONS

A. Discharge of treated wastewater at a location or in a manner different than described in this Order is prohibited.

B. Bypass of untreated or partially-treated wastewater to waters of the United States is prohibited, except as provided for in Attachment D section I.G. Combined sewer discharges during wet weather (as defined in Attachment A) authorized by this Order are not subject to this prohibition.

Blended wastewater is biologically-treated wastewater blended with wastewater diverted around biological treatment units at the Oceanside Water Pollution Control Plant. These anticipated discharges are approved under the bypass conditions when (1) the Discharger's instantaneous wet weather influent flow exceeds the capacity of the biological treatment units of 43 MGD, (2) all wet weather flows passing the headworks of the plant receive at least primary treatment, and (3) the discharge complies with the applicable effluent and receiving water limitations contained in this Order. Furthermore, the Discharger shall operate its Facility as designed and in accordance with the Operation and Maintenance Manual for the Facility. This means it shall optimize storage and use of equalization units and shall fully utilize the biological treatment units. The Discharger shall report incidents of blended effluent discharges in monthly self-monitoring reports and shall conduct monitoring of this discharge as specified in the attached Monitoring and Reporting Program (MRP) (Attachment E).

C. Discharge at Discharge Point No. 001 is prohibited when the discharge does not receive a minimum initial dilution of at least 148:1 (parts seawater per part wastewater), as modeled assuming no currents. Compliance shall be achieved by proper operation and maintenance of the discharge outfall to ensure that it (or its replacement, in whole or part) is in good working order and is consistent with, or can achieve better mixing than, 148:1. The Discharger shall describe measures taken to ensure compliance in its Report of Waste Discharge and application for permit reissuance.

D. Discharge to a water of the United States from any location other than Discharge Point No. 001 is prohibited, except from Discharge Point Nos. CSD-001, CSD-002, CSD-003, CSD-004, CSD-005, CSD-006, and CSD-007 during wet weather (as defined in Attachment A) in accordance with the requirements in this Order.

E. Average dry weather Oceanside Water Pollution Control Plant influent flow in excess of 43 MGD is prohibited. Average dry weather influent flow shall be determined from three consecutive dry weather months each year, with compliance measured at Monitoring Location INF-001A as described in the MRP.

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Technology-Based Effluent Limitations

1. Oceanside Water Pollution Control Plant

During dry weather, the Discharger shall comply with the following effluent limitations for discharges from the Oceanside Water Pollution Control Plant, with compliance measured at Monitoring Location EFF-001A as described in the MRP, as follows:

Table 4. Effluent Limitations - Oceanside Water Pollution Control Plant

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Carbonaceous Biochemical Oxygen Demand, 5-day @ 20°C ($CBOD_5$)	mg/L	25	40	---	---	---
Total Suspended Solids (TSS)	mg/L	30	45	---	---	---
$CBOD_5$ Removal [1]	%	85 (minimum)	---	---	---	---
TSS Removal [1]	%	85 (minimum)	---	---	---	---
pH [2]	s.u.	---	---	---	6.0	9.0

Abbreviations:

mg/L = milligrams per liter
s.u. = standard units
% = percent

Footnotes:

[1] The arithmetic mean of $CBOD_5$ and TSS, by concentration, of effluent samples collected at Monitoring Location EFF-001A as described in the MRP shall not exceed 15 percent of the arithmetic mean of the $CBOD_5$ and TSS, by concentration, of influent samples collected at Monitoring Location INF-001A as described in the MRP, at approximately the same times during the same periods.

[2] If the Discharger monitors pH continuously, pursuant to 40 C.F.R. § 401.17 the Discharger shall be in compliance with this pH limitation provided that both of the following conditions are satisfied: (i) the total time during which the pH is outside the required range shall not exceed 7 hours and 26 minutes in any calendar month; and (ii) no individual excursion from the required pH range shall exceed 60 minutes.

During wet weather, the Discharger shall comply with the narrative technology-based effluent limitations contained in Provision VI.C.5.a (Nine Minimum Controls).

2. Westside Recycled Water Project

When recycled water is being produced, the Discharger shall comply with the following effluent limitations for discharges from the Westside Recycled Water Project, with compliance measured at Monitoring Location EFF-001R as described in the MRP, as follows:

Table 5. Effluent Limitations - Westside Recycled Water Project

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
TSS	mg/L	60	---	---	---	---
pH [1]	s.u.	---	---	---	6.0	9.0
Oil and Grease	mg/L	25	40	---	---	75
Settleable Solids	mL/L	1.0	1.5	---	---	3.0
Turbidity	NTU	75	100	---	---	225

Abbreviations:

mg/L = milligrams per liter
mL/L = milliliters per liter
NTU = nephelometric turbidity units
s.u. = standard units

Footnote:

[1] If the Discharger monitors pH continuously, pursuant to 40 C.F.R. § 401.17 the Discharger shall be in compliance with this pH limitation provided that both of the following conditions are satisfied: (i) the total time during which the pH is outside the required range shall not exceed 7 hours and 26 minutes in any calendar month; and (ii) no individual excursion from the required pH range shall exceed 60 minutes.

B. Water Quality-Based Effluent Limitations

During dry weather, the Discharger shall comply with the following effluent limitation for discharges at Discharge Point No. 001, with compliance measured at Monitoring Location EFF-001C as described in the MRP, as follows:

Table 6. Effluent Limitations - Discharge Point No. 001

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Chronic Toxicity [1]	Pass or Fail	---	---	Pass	---	---

Footnote:

[1] MRP section V sets forth chronic toxicity monitoring requirements. The discharge is subject to determination of "Pass" or "Fail" from a single chronic toxicity test conducted at the in-stream waste concentration (IWC) defined in MRP section V.A.2 using the Test of Significant Toxicity (TST) statistical approach (Welch's t-test) in *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document* (EPA 833-R-10-003, 2010), Appendix A, Figure A-1 and Table A-1, and Appendix B, Table B-1.

The TST null hypothesis shall be the following:

Mean discharge IWC response ≤ 0.75 × Mean control response

A test result that rejects this null hypothesis shall be reported as "Pass." A test result that does not reject this null hypothesis shall be reported as "Fail." The relative "Percent Effect" at the discharge IWC shall also be reported as:

([Mean control response - Mean discharge IWC response] ÷ Mean control response) × 100

During wet weather, the Discharger shall comply with the narrative water quality-based effluent limitations contained in Provision VI.C.5.c (Long-Term Control Plan) for the Discharge Points in Table 2.

V. RECEIVING WATER LIMITATIONS

Discharge shall not cause or contribute to a violation of any applicable water quality standard (with the exception set forth in State Water Board Order No. WQ 79-16) for receiving waters adopted by the Regional Water Board, State Water Resources Control Board (State Water Board), or U.S. EPA as required by the CWA and regulations adopted thereunder. If more stringent water quality standards are promulgated or approved pursuant to CWA section 303, or amendments thereto, the Regional Water Board and U.S. EPA may revise or modify this Order in accordance with the more stringent standards.

VI. PROVISIONS

A. Standard Provisions

1. The Discharger shall comply with all "Standard Provisions" included in Attachment D. In Attachment D, references to "Regional Water Board" shall be interpreted as "Regional Water Board and U.S. EPA," and references to "Regional Water Board Executive Officer" shall be interpreted as "Regional Water Board Executive Officer and U.S. EPA."

2. The Discharger shall comply with all applicable provisions of the "Regional Standard Provisions, and Monitoring and Reporting Requirements" (Attachment G), except as follows:

a. Attachment G section V.C.1.d.iv (Dioxin-TEQ). The Discharger shall calculate and report dioxin-TEQs using the definition of TCDD Equivalents in Attachment A, which supersedes the definition in Attachment G.

b. Attachment G section III.A.2 (Minimum Levels). The Discharger shall comply with the minimum levels listed in Ocean Plan Appendix II in lieu of those listed in Attachment G Table B.

c. Attachment G section III.A.3.b.v(b) (Approved Wet Weather Bypasses). The Discharger shall comply with the monitoring requirements for wet weather secondary bypasses in MRP Table E-5 (Monitoring Location EFF-001B) in lieu of those listed in Attachment G section II.A.3.b.v(b).

In Attachment G, references to "Regional Water Board" shall be interpreted as "Regional Water Board and U.S. EPA," and references to "Regional Water Board Executive Officer" shall be interpreted as "Regional Water Board Executive Officer and U.S. EPA."

B. Monitoring and Reporting

The Discharger shall comply with the MRP, and future revisions thereto, and applicable sampling and reporting requirements in Attachments D and G.

C. Special Provisions

1. Reopener Provisions

The Regional Water Board or U.S. EPA may modify or reopen this Order prior to its expiration date in any of the following circumstances, as allowed by law:

a. If present or future investigations demonstrate that the discharges governed by this Order have or will have a reasonable potential to cause or contribute to, or will cease to have, adverse impacts on water quality or beneficial uses of the receiving waters.

b. As new or revised water quality standards or total maximum daily loads (TMDLs) come into effect for surface waters of the State (whether statewide, regional, or site-specific). In such cases, effluent limitations in this Order may be modified as necessary to reflect updated water quality standards and wasteload allocations in TMDLs. Adoption of effluent limitations contained in this Order is not intended to restrict in any way future modifications based on legally adopted water quality objectives, TMDLs, or as otherwise permitted under federal regulations governing NPDES permit modifications.

c. If translator, dilution, or other water quality studies provide a basis for determining that a permit condition should be modified.

d. If State Water Board precedential decisions, new policies, new laws, or new regulations are adopted.

e. If an administrative or judicial decision on a separate NPDES permit or WDRs addresses requirements similar to this discharge.

f. If combined sewer system discharge controls fail to meet water quality standards or protect designated uses.

g. Or as otherwise authorized by law.

The Discharger may request a permit modification based on any of the circumstances above. With any such request, the Discharger shall include antidegradation and anti-backsliding analyses.

2. Effluent Characterization Study and Report

a. Study Elements. The Discharger shall characterize and evaluate the dry weather discharge from Discharge Point No. 001 to verify that the reasonable potential analysis conclusions of this Order remain valid and to inform the next permit reissuance. The Discharger shall monitor Ocean Plan Table 1 pollutants as described in the MRP and evaluate on an annual basis whether concentrations of any Ocean Plan Table 1 pollutants significantly increase over past performance. The Discharger shall investigate the cause of any such increases. The investigation may include, but need not be limited to, increasing the monitoring frequency, monitoring internal process streams, and monitoring of influent sources. The Discharger shall establish remedial measures addressing any increases resulting in reasonable potential to cause or contribute to an exceedance of

applicable water quality objectives (see Fact Sheet Tables F-9 and F-10 for the objectives). This requirement to establish remedial measures may be satisfied through identification of the constituent as a "pollutant of concern" in the Discharger's Pollutant Minimization Program, described in Provision VI.C.3.

b. Reporting Requirements

i. Routine Reporting. The Discharger shall, within 45 days of receipt of analytical results, report the identity of any Ocean Plan Table 1 pollutant detected at or above the applicable water quality objective to the Regional Water Board and U.S. EPA.

ii. Annual Reporting. The Discharger shall summarize the annual data evaluation and source investigation in its annual self-monitoring report (see MRP § VIII.B).

3. Pollutant Minimization Program

a. The Discharger shall continue to improve its Pollutant Minimization Program to promote minimization of pollutant loadings to the sewer system and therefore to the receiving waters.

b. The Discharger shall submit an annual report no later than February 28 each year. Each annual report shall include at least the following information:

i. Brief description of treatment plant. The description shall include the service area and treatment plant processes.

ii. Discussion of current pollutants of concern. Periodically, the Discharger shall analyze its circumstances to determine which pollutants are currently a problem and which pollutants may be potential future problems. This discussion shall include the reasons for choosing the pollutants. At a minimum, the Discharger shall consider copper and zinc as pollutants of concern.

iii. Identification of sources for pollutants of concern. This discussion shall include how the Discharger intends to estimate and identify pollutant sources. The Discharger shall include sources or potential sources not directly within the ability or authority of the Discharger to control, such as pollutants in the potable water supply and air deposition.

iv. Identification of tasks to reduce the sources of pollutants of concern. This discussion shall identify and prioritize tasks to address the Discharger's pollutants of concern. The Discharger may implement the tasks by itself or participate in group, regional, or national tasks that address its pollutants of concern. The Discharger is strongly encouraged to participate in group, regional, or national tasks that address its pollutants of concern whenever it is efficient and appropriate to do so. An implementation timeline shall be included for each task.

v. Outreach to employees. The Discharger shall inform employees about the pollutants of concern, potential sources, and how they might be able to help reduce the

discharge of these pollutants of concern into the Facility. The Discharger may provide a forum for employees to provide input.

vi. **Continuation of Public Outreach Program.** The Discharger shall continue a pollution prevention public outreach program for its service area. Outreach may include participation in existing community events, such as county fairs; initiating new community events, such as displays and contests during Pollution Prevention Week; conducting school outreach programs; conducting plant tours; and providing public information in newspaper articles or advertisements, radio or television stories or spots, newsletters, utility bill inserts, or web sites. Information shall be specific to target audiences. The Discharger shall coordinate with other agencies as appropriate.

vii. **Discussion of criteria used to measure Pollutant Minimization Program and task effectiveness.** The Discharger shall establish criteria to evaluate the effectiveness of its Pollutant Minimization Program. This discussion shall identify the specific criteria used to measure the effectiveness of each task in Provisions VI.C.3.b.iii, iv, v, and vi.

viii. **Documentation of efforts and progress.** This discussion shall detail all of the Discharger's Pollutant Minimization Program activities during the reporting year.

ix. **Evaluation of Pollutant Minimization Program and task effectiveness.** The Discharger shall use the criteria established in Provision VI.C.3.b.vii to evaluate the program and task effectiveness.

x. **Identification of specific tasks and timelines for future efforts.** Based on the evaluation, the Discharger shall explain how it intends to continue or change its tasks to more effectively reduce the amount of pollutants flowing to the Facility, and subsequently in its effluent.

c. The Discharger shall develop and conduct a Pollutant Minimization Program as further described below when there is evidence that a priority pollutant is present in the effluent above an effluent limitation (e.g., sample results reported as detected but not quantified [DNQ] when the effluent limitation is less than the method detection limit [MDL], sample results from analytical methods more sensitive than those methods required by this Order, presence of whole effluent toxicity, health advisories for fish consumption, or results of benthic or aquatic organism tissue sampling) and either:

i. A sample result is reported as DNQ and the effluent limitation is less than the Reporting Level (RL); or

ii. A sample result is reported as not detected (ND) and the effluent limitation is less than the MDL using definitions in Attachment A and reporting protocols described in the MRP.

d. If triggered by the reasons set forth in Provision VI.C.3.c, the Discharger's Pollutant Minimization Program shall include, but not be limited to, the following actions and submittals:

i. Annual review and semiannual monitoring of potential sources of the reportable pollutant, which may include fish tissue monitoring and other bio-uptake sampling, or alternative measures when source monitoring is unlikely to produce useful analytical data;

ii. Quarterly monitoring for the reportable pollutant in treatment plant influent. The Regional Water Board Executive Officer and U.S. EPA may approve alternative measures when influent monitoring is unlikely to produce useful analytical data;

iii. Submittal of a control strategy designed to proceed toward the goal of maintaining concentrations of the reportable pollutant in the effluent at or below the effluent limitation;

iv. Implementation of appropriate cost-effective control measures for the reportable pollutant, consistent with the control strategy; and

v. Inclusion of the following within the annual report required by Provision VI.C.3.b:

(a) All Pollutant Minimization Program monitoring results for the previous year;
(b) List of potential sources of the reportable pollutant;
(c) Summary of all actions undertaken pursuant to the control strategy; and
(d) Description of actions to be taken in the following year.

4. Special Provisions for Publicly-Owned Treatment Works (POTWs)

a. Sludge and Biosolids Management. The Discharger shall manage its sludge and biosolids in accordance with federal regulations (40 C.F.R. parts 258 and 503) and Attachment H.

i. Sludge and biosolids treatment and storage shall not create a nuisance, such as objectionable odors or flies, or result in groundwater contamination.

ii. Sludge and biosolids treatment and storage facilities shall be adequate to divert surface runoff from adjacent areas, to protect site boundaries from erosion, and to prevent conditions that would cause drainage from stored materials. Adequate protection is defined as protection from at least a 100-year storm and the highest possible tidal state that may occur.

iii. This Order does not authorize permanent onsite sludge or biosolids storage or disposal. A Report of Waste Discharge shall be filed and the site brought into compliance with applicable regulations prior to commencement of any such activity.

b. Pretreatment Program. The Discharger shall implement and enforce its approved pretreatment program in accordance with federal pretreatment regulations (40 C.F.R. part 403); pretreatment standards promulgated under CWA sections 307(b), 307(c), and 307(d); pretreatment requirements specified under 40 C.F.R. section 122.44(j); and the requirements in Attachment H, "Pretreatment Requirements." The Discharger's responsibilities include, but are not limited to, the following:

i. Enforcement of the National Pretreatment Standards of 40 C.F.R. sections 403.5 and 403.6;

ii. Implementation of its pretreatment program in accordance with legal authorities, policies, procedures, and financial provisions described in the National Pretreatment Program (40 C.F.R. part 403);

iii. Submission of reports to the State Water Board, the Regional Water Board, and U.S. EPA as described in Attachment H; and

iv. Evaluation of the need to revise local limits as required under 40 C.F.R. sections 122.44(j)(2)(ii) and 403.5(c)(1) and, by November 1, 2020, submission of a report describing the changes to local limits with a plan and schedule for implementation, or the rationale for making no changes to local limits.

c. Anaerobically-Digestible Material. If the Discharger receives hauled-in anaerobically-digestible material for injection into an anaerobic digester, the Discharger shall notify the Regional Water Board and develop and implement Standard Operating Procedures for this activity. The Standard Operating Procedures shall be developed prior to initiation of hauling. The Standard Operating Procedures shall address material handling, including unloading, screening, or other processing prior to anaerobic digestion; transportation; spill prevention; spill response; avoidance of the introduction of materials that could cause interference, pass through, or upset of the treatment processes; avoidance of prohibited material; vector control; odor control; operation and maintenance; and the disposition of any solid waste segregated from introduction to the digester. The Discharger shall train its staff on the Standard Operating Procedures and maintain records for a minimum of three years for each load received, describing the hauler, waste type, and quantity received. In addition, the Discharger shall maintain records for a minimum of three years for the disposition, location, and quantity of cumulative pre-digestion segregated solid waste hauled offsite.

d. Separate Sanitary Sewer Systems. The Discharger shall properly operate and maintain its separate sanitary collection systems (see Attachments D and G, section I.D), report any noncompliance with respect to its separate sanitary collection systems (see Attachments D and G, sections V.E.1 and V.E.2), and mitigate any discharges in violation of this Order associated with its separate sanitary collection systems (see Attachments D and G, section I.C).

State Water Board Order No. 2006-0003-DWQ, Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, as amended by State Water Board Order No. WQ 2013-0058-EXEC (statewide WDRs), contains requirements for operation and maintenance of collection systems and for reporting and mitigating sanitary sewer overflows. The statewide WDRs clearly and specifically stipulate requirements for operation and maintenance and for reporting and mitigating sanitary sewer overflows. Implementing the requirements for operation and maintenance and mitigation of sanitary sewer overflows set forth in the statewide WDRs (and any subsequent order updating those requirements) shall satisfy the corresponding federal NPDES requirements

specified in Attachments D and G of this Order for the separate sanitary collection systems. Following the reporting requirements set forth in the statewide WDRs (and any subsequent order updating these requirements) shall satisfy the NPDES reporting requirements for sanitary sewer overflows specified in Attachments D and G.

5. Combined Sewer System

a. Nine Minimum Controls. The Discharger shall implement the following nine minimum controls:

i. Control No. 1: Conduct Proper Operations and Maintenance Program. The Discharger shall implement an operations and maintenance program that establishes operation, maintenance, and inspection procedures to ensure that the combined sewer system is operated and maintained in a manner that complies with the requirements of this Order. The program shall include the elements listed below:

(a) Organizational Structure. The Discharger shall maintain an up-to-date directory of operations and maintenance staff, and a designated primary contact person for the Facility. The Discharger shall notify the Regional Water Board and U.S. EPA within 90 days of designating a new primary contact person.

(b) Budget. The Discharger shall allocate sufficient funds and personnel for routine operations and maintenance, and to provide for possible emergencies.

(c) Critical Facilities and Major System Components. The Discharger shall maintain a written inventory of critical facilities and major system components (i.e., those facilities and system components that affect the performance of the combined sewer system). The inventory shall include force mains, pump stations, major treatment plant units, transport/storage structures, combined sewer discharge outfalls, Discharge Point No. 001 outfall, tide gates, overflow weirs, and baffles. The Discharger shall include the following information for each critical facility and major system component in the inventory:

(1) Physical description (e.g., capacity, dimensions, age) and location;
(2) Status (e.g., elements out of service or planned to be taken out of service); and
(3) Description of preventative maintenance planned and completed.

At a minimum, the Discharger shall review and update the inventory once every 12 months. The Discharger may combine the inventory and the Wastewater Facilities Status Report (see Attachment G section I.D.2) into one document.

(d) Procedures for Routine Maintenance. The Discharger shall document procedures for routine maintenance and timely repair of the critical facilities and major system components listed in the inventory required by Provision VI.C.5.a.i(c). Routine maintenance shall focus on preventative maintenance to avoid failures during critical times.

(e) Non-Routine Maintenance and Emergency Situations. The Discharger shall develop and implement an emergency response plan for each critical facility to

minimize the likelihood and adverse impacts of failure to the maximum extent practicable. The emergency response plan shall be consistent with the Contingency Plan required by Attachment G section I.C.1.

(f) Inspections. The Discharger shall conduct an inspection program of the combined sewer system to provide reasonable assurance that unpermitted discharges, obstructions, and damage will be discovered. At a minimum, the Discharger shall do the following:

(1) Inspect each critical facility and major system component identified in accordance with Provision VI.C.5.a.i(c), above, at least once every 12 months to ensure they are in good working condition. The inspection shall include, but not be limited to, entering the regulator structure, if accessible; determining the extent of any structural defects or debris and grit buildup; removing any debris that may constrict flow, cause blockage, or result in a prohibited discharge; and adjusting tide gates to minimize combined sewer discharges and to prevent tidal inflow.

(2) Record all inspection results, including the date and time of the inspection, the inspection findings, and description of any corrective actions taken.

(g) Training. The Discharger shall provide training to operations and maintenance staff regarding operation and maintenance duties and standard operation procedures. Training shall be consistent with the Discharger's Operation and Maintenance Manual required by Attachment G section I.D.1 (Operation and Maintenance Manual).

(h) Operation and Maintenance Program Review. The Discharger shall review and modify its operations and maintenance program as necessary and in accordance with sections I.C (Duty to Mitigate) and I.D (Proper Operation and Maintenance) of Attachments D and G. At a minimum, the Discharger shall review and update the Operation and Maintenance Manual required by Attachment G section I.D.1 (Operation and Maintenance Manual) once per calendar year.

ii. Control No. 2: Maximize Use of Collection System for Storage

(a) The Discharger shall maximize use of the combined sewer system for in-line storage to reduce the magnitude, frequency, and duration of combined sewer discharges. At a minimum, the Discharger shall implement the following controls:

(1) Prevent intrusion of receiving waters into the combined sewer system;

(2) Use all facilities, including any inoperative or unused treatment facilities, to store or treat wet weather flows to the maximum extent practicable; and

(3) Implement programs to remove and prevent flow obstructions in the combined sewer system, including but not limited to catch basin cleaning; gravity sewer cleaning; fats, oils and grease control; gravity sewer condition assessment;

gravity sewer rehabilitation and replacement; and disconnection of illegal connections.

(b) The Discharger shall notify and report sewer overflows from the combined sewer system by implementing the following within six months of the effective date of this Order:

(1) The Discharger shall complete the CIWQS Online Collection System Questionnaire, as required by the CIWQS system, and enter information regarding all sewer overflows from the combined sewer system into the CIWQS Online SSO Database, including all required database fields. The Discharger's Legally Responsible Official, as required by the CIWQS system, shall certify all information submitted. The Discharger shall update and certify the Collection System Questionnaire at least every 12 months.

(2) For sewer overflows from the combined sewer system with volumes 1,000 gallons or greater, the Discharger shall submit draft reports through the CIWQS Online SSO database within 3 business days of becoming aware of the sewer overflow from the combined sewer system and certify the reports within 15 calendar days of the end date of the sewer overflow from the combined sewer system.

(3) For sewer overflows from the combined sewer system with volumes 50,000 gallons or greater that reach surface waters, the Discharger shall submit a technical report within 45 calendar days of the end date for such overflows that further explains the causes and circumstances, including the method and data used to calculate the volume, and lists response actions completed and planned.

(4) For sewer overflows from the combined sewer system with volumes less than 1,000 gallons, the Discharger shall submit certified reports to the CIWQS Online SSO database within 30 calendar days of the end of the month during which such overflows occur.

(5) For each month during which no sewer overflow from the combined sewer system occurs, the Discharger shall certify, within 30 calendar days of the end of the month during which no sewer overflow from the combined sewer system occurred, that no sewer overflow from the combined sewer system occurred.

Following the reporting requirements set forth above shall satisfy the reporting requirements for sewer overflows from the combined sewer system specified in Attachments D and G.

iii. Control No. 3: Review and Modify Pretreatment Program. The Discharger shall implement controls to minimize the impact of non-domestic discharges to its collection system. At three-year intervals, the Discharger shall re-evaluate whether additional modifications to its pretreatment program, such as requirements for

detention during wet weather, are feasible or practical. The Discharger shall document this re-evaluation in the annual report required by Provision VI.C.4.b and Attachment H.

iv. **Control No. 4: Maximize Flow to Treatment Plant.** During wet weather, the Discharger shall maximize the volume of wastewater that receives treatment at the Oceanside Water Pollution Control Plant (i.e., secondary treatment for 43 MGD and primary treatment for an additional 22 MGD) and is discharged at Discharge Point No. 001.

v. **Control No. 5: Prohibit Dry Weather Combined Sewer Overflows.** Dry weather discharges at Discharge Point Nos. CSD-001, CSD-002, CSD-003, CSD-004, CSD-005, CSD-006, and CSD-007 are prohibited (see Discharge Prohibition III.D). During any dry weather discharge at Discharge Point Nos. CSD-001, CSD-002, CSD-003, CSD-004, CSD-005, CSD-006, or CSD-007, the Discharger shall inspect the associated outfall structure each day until the unauthorized discharge stops. For each prohibited dry weather discharge, the Discharger shall submit the information required by Attachment G section V.C.1.a (e.g., duration, cause, corrective actions taken or planned).

vi. **Control No. 6: Control Solid and Floatable Materials in Combined Sewer Discharges.** The Discharger shall implement measures to minimize the volume of solid and floatable materials in combined sewer discharges (e.g., equip Discharge Point Nos. CSD-001, CSD-002, CSD-003, CSD-004, CSD-005, CSD-006, and CSD-007 with baffles, screens, racks, or other means to reduce the volume of solid and floatable materials). The Discharger shall also remove and properly dispose of solid and floatable materials captured in the combined sewer system.

vii. **Control No. 7: Develop and Implement Pollution Prevention Program.** The Discharger shall implement a pollution prevention program focused on reducing the amount of pollutants that enter the combined sewer system. The Discharger shall develop and implement this program in accordance with Provision VI.C.3 (Pollutant Minimization Program). As part of this program, the Discharger shall implement a street sweeping program and clean catch basins at a frequency sufficient to minimize large accumulations of pollutants and debris.

viii. **Control No. 8: Notify Public of Combined Sewer Discharges.** The Discharger shall inform the public of the location of combined sewer discharge outfalls (i.e., Discharge Point Nos. CSD-001, CSD-002, CSD-003, CSD-005, CSD-006, and CSD-007), the actual occurrences of combined sewer discharges, the possible health and environmental impacts of combined sewer discharges, and the recreational or commercial activities (e.g., swimming, shellfish harvesting) curtailed as a result of combined sewer discharges. Notification shall include the following, at a minimum:

(a) The Discharger shall maintain permanent identification signs at the locations of Discharge Point Nos. CSD-001, CSD-002, CSD-003, CSD-005, CSD-006, and CSD-007, and at public access points. The Discharger shall inspect, and replace as necessary, all permanent signs at least once per calendar year to ensure

that the signs are visible and readable. New or replacement signs shall be visible and legible from a distance of 50 feet onshore and offshore, and contain the following information, at a minimum:

- Discharge Point No. (discharge identification number).
- Telephone number to report dry weather discharges.
- Description of discharge, including the words "sewage" and "pathogens that can cause illness."
- Warning, alert, caution, or other term to notify the public that caution is needed.

(b) The Discharger shall post warning signs, including "No Swimming" signs, at beach locations whenever a combined sewer discharge occurs to inform users that bacteria concentrations may be elevated. The Discharger shall post warning signs within four hours of the time the discharge commences unless the discharge begins after 4:00 p.m., in which case, the Discharger shall post warning signs by 8:00 a.m. the following day. Signs shall remain posted until analysis indicates that water quality meets bacteriological criteria for recreation.

(c) The Discharger shall post warning signs at public access points where shellfish may be harvested for human consumption whenever a combined sewer discharge occurs. The Discharger shall post warning signs within four hours of the time the discharge commences unless the discharge begins after 4:00 p.m., in which case, the Discharger shall post warning signs by 8:00 a.m. the following day. Signs shall be posted until the City and County Health Department indicates that posting is no longer required.

(d) The Discharger shall provide electronic notification of combined sewer discharges through a free-access website and telephone hotline. The electronic notification shall include information about the location and impacts of combined sewer discharges, and provide a telephone number for the public to report discharges.

ix. Control No. 9: Monitor to Characterize Combined Sewer Discharge Impacts and Efficacy of Controls. The Discharger shall monitor to determine the occurrence and apparent impacts of combined sewer discharges, and the efficacy of controls, as described in Provision VI.C.8 and the MRP.

b. Documentation of Nine Minimum Controls. The Discharger shall maintain records documenting implementation of the nine minimum controls described in Provision VI.C.5.a. By February 1 each year, the Discharger shall submit a report to the Regional Water Board and U.S. EPA covering the prior October 1 through September 30. The first such report shall be due February 1, 2021, and cover November 1, 2019, through September 30, 2020. The report shall summarize actions taken and planned to implement the nine minimum controls.

c. Long-Term Control Plan (LTCP). The Discharger shall implement its Long-Term Control Plan (LTCP) and shall comply with the following provisions:

i. The Discharger shall optimize system operations to minimize combined sewer discharges and maximize pollutant removal during wet weather.

ii. The Discharger shall use all facilities, including any inoperative or unused facilities, to store or treat wet weather flows to the maximum extent practicable.

iii. The Discharger shall capture for treatment, or storage and subsequent treatment, 100 percent of the combined wastewater and stormwater flow collected in the combined sewer system during precipitation events. Captured flows shall receive the minimum treatment specified in Table 2.

iv. The Discharger shall operate the facilities as set forth below and maintain records documenting implementation. If the Discharger demonstrates that changes to these operating parameters will result in additional storage or treatment, it shall implement such changes after receiving written concurrence from the Regional Water Board Executive Officer and U.S. EPA.

(a) The Oceanside Water Pollution Control Plant shall have an instantaneous influent flow rate of at least 43 MGD prior to discharging primary-treated effluent from the plant to Discharge Point No. 001.

(b) The Oceanside Water Pollution Control Plant shall have an instantaneous influent flow rate of at least 60 MGD prior to initiating discharge from the Westside Transport/Storage Structure to Discharge Point No. 001.

(c) The flow at Discharge Point No. 001 shall be at least 165 MGD within 2 hours of a discharge from Discharge Point No. CSD-002 or CSD-003.

(d) The Discharger shall ensure that two duty pumps at the Sea Cliff No. 1 Pump Station are operating at maximum capacity prior to discharging at Discharge Point No. CSD-005.

(e) The Discharger shall ensure that the Sea Cliff No. 2 Pump Station is operating at maximum capacity and at least 1,100 gallons per minute prior to discharging at Discharge Point Nos. CSD-006 and CSD-007.

(f) The Discharger shall comply with the following after rain and combined sewer discharges subside:

(1) If the National Weather Service predicts at least a 30 percent chance of rain within the next 24 hours, the Discharger shall maximize storage capacity for predicted rain by pumping down the Westside Transport/Storage Structure to dry weather levels (i.e., ten feet or less in the East Box).

(2) If the National Weather Service predicts less than a 30 percent chance of rain within the next 24 hours, the Discharger shall maximize secondary treatment

at the Oceanside Water Pollution Control Plant by ceasing the discharge of primary-treated plant effluent and Westside Transport/Storage Structure effluent to Discharge Point No. 001.

d. LTCP Update. The Discharger shall update its LTCP by implementing the following tasks based on the *Combined Sewer Overflow (CSO) Control Policy* and shall submit the required reports to the Regional Water Board and U.S. EPA as specified in the table below. In doing so, the Discharger may use previously completed studies to the extent that they accurately provide the required information.

Table 7. Tasks to Update Long-Term Control Plan (LTCP)

Task	Compliance Date
1. Post-Construction Characterization, Monitoring, and Modeling of Combined Sewer System The Discharger shall submit a System Characterization Report with a comprehensive characterization of the combined sewer system developed through records review, monitoring, modeling, and other means as appropriate to establish the existing conditions upon which the Consideration of Sensitive Areas Report (Task 3) will be based. At a minimum, the System Characterization Report shall include the following: **a.** Thorough description of the entire combined sewer system, including how it responds during a modeled typical year and various precipitation events (including 3-hour duration, 5-year and 10-year return frequency storms). This description will consider the volume and frequency of combined sewer system discharges and sewer overflows from the combined sewer system, and the impacts of climate change and sea level rise; **b.** Description of each model used, including a discussion of model calibration and validation; **c.** Location, frequency, and characteristics of actual combined sewer discharges and sewer overflows from the combined sewer system, and their locations relative to sensitive areas, for at least the last 10 years; **d.** Description of any temporal or spatial trends of sewer overflows from the combined sewer system; **e.** Based on available information, evaluation of how combined sewer discharges affect receiving water quality. At a minimum, the Discharger shall compare wet weather average and maximum discharge characteristics and receiving water monitoring data with Ocean Plan Table 1 water quality objectives; and **f.** Evaluation of combined sewer discharge control efficacy (e.g., using TSS as a proxy for pollutant removal efficiency), including a description of any method used.	Within 48 months of this Order's effective date
2. Public Participation The Discharger shall submit a description of its completed and planned public participation efforts to actively involve the affected public in its decision-making process related to capital planning, including implementation of any additional long-term combined sewer system controls based on the results of the Consideration of Sensitive Areas Report. The affected public includes rate-payers (including rate-payers in separate sanitary sewer system service areas), industrial users, persons who use the receiving waters, and any other interested persons. The public participation efforts may include outreach through methods such as public meetings, direct mailers, billing inserts, press releases, postings of information on the Discharger's website, and development of advisory committees.	Within 48 months of this Order's effective date

Task	Compliance Date
3. Consideration of Sensitive Areas Based on the findings of the System Characterization Report (Task 1), the Discharger shall submit a Consideration of Sensitive Areas Report that evaluates, prioritizes, and proposes control alternatives needed to eliminate, relocate, or reduce the magnitude or frequency of discharges to sensitive areas from Discharge Point Nos. CSD-001, CSD-002, CSD-003, CSD-005, CSD-006, and CSD-007. The Consideration of Sensitive Areas Report shall include the following, at a minimum: **a.** Provide updated water contact recreational use surveys, focusing particularly on recreational use following combined sewer discharges; **b.** Identify control alternatives for each combined sewer discharge structure and the combined sewer system as a whole, including but not limited to the following: **i.** Green infrastructure and low impact development; **ii.** Increased storage within the combined sewer system and at the Oceanside Water Pollution Control Plant; **iii.** Increased treatment capacity; **iv.** Operational changes; **v.** Increased pumping capacity at the Westside Pump Station; and **vi.** Use of high-rate treatment technologies and disinfection to minimize pollutant loads. **c.** Evaluate the practical and technical feasibility of the proposed alternatives; **d.** Using a model, simulate existing conditions and expected conditions after construction and operation of each proposed alternative, including how the alternative would be expected to affect water quality and combined sewer discharge volumes and frequencies at each combined sewer discharge outfall, and incorporating consideration of climate change and sea level rise; **e.** Evaluate the feasibility, costs, and benefits of the alternatives. Evaluate financial capabilities (e.g., using U.S. EPA's *Combined Sewer Overflows, Guidance for Financial Capability Assessment and Schedule Development* [EPA 832-B-97-004, February 1997] or other appropriate guidance); **f.** Consider costs relative to water quality and other public benefits, financial capabilities, other infrastructure needs, and integrated planning considerations, and prioritize and propose for implementation alternatives to eliminate, relocate, or reduce the magnitude or frequency of discharges from Discharge Point Nos. CSD-001, CSD-002, CSD-003, CSD-005, CSD-006, and CSD-007 based on Tasks 3.a through 3.e, above; and **g.** Provide an implementation schedule that includes interim milestones.	Within 48 months of this Order's effective date
4. Operational Plan **a.** The Discharger shall submit a Wet Weather Operations Report that proposes a set of operational parameters to be used as performance measures to ensure that wet weather operations maximize pollutant removal and minimize the frequency, volume, and duration of combined sewer discharges and sewer overflows from the combined sewer system. The performance measures may include all or a portion of those listed in Provision VI.C.5.c.iv and shall include measures to evaluate compliance. The Discharger shall provide the technical basis for proposing new performance measures or retaining the existing ones. **b.** Within 90 days of receiving written concurrence from the Regional Water Board Executive Officer and U.S. EPA, the Discharger shall update its Operation and Maintenance Manual, implement the proposed performance measures in lieu of those in Provision VI.C.5.c.iv, and demonstrate compliance.	Within 24 months of this Order's effective date Within 90 days of receiving written concurrence

Task	Compliance Date
5. Post-Construction Compliance Monitoring Program The MRP contains post-construction compliance monitoring requirements. The Discharger shall submit a Post-Construction Compliance Monitoring Plan proposing modifications, as appropriate, to the MRP for the next permit term to verify compliance with applicable water quality standards and protection of designated uses, as well as to ascertain the effectiveness of combined sewer system controls. At a minimum, the Post-Construction Compliance Monitoring Plan shall evaluate whether any reduction or increase in monitoring, or alternative monitoring, is appropriate.	With Report of Waste Discharge

6. Westside Recycled Water Project Operations Notification

The Discharger shall notify the Regional Water Board and U.S. EPA at least 30 days prior to commencing Westside Recycled Water Project operations. The notification shall include the following:

a. Date that operations will commence;

b. Description of the project as constructed, including a description and flow diagram of all treatment processes;

c. Description and line diagram of how and where the concentrate from the reverse osmosis process is to be discharged to Discharge Point No. 001;

d. Description of anticipated changes in the quality of effluent discharged to Discharge Point No. 001; and

e. Verification that effluent discharged to Discharge Point No. 001 will comply with this Order's requirements.

If pollutant concentrations are expected to increase by more than considered in the reasonable potential analysis based on future effluent quality with the Westside Recycled Water Project (see Fact Sheet § IV.C.4.b), the notification shall also summarize anticipated maximum receiving water concentrations and compare them to the water quality objectives listed in Fact Sheet Tables F-9 and F-10.

7. Flame Retardant Special Study

The Discharger shall propose a special study to evaluate Oceanside Water Pollution Control Plant effluent flame retardant concentrations and flame retardant mass loadings to the Pacific Ocean from Discharge Point No. 001. The Discharger shall submit a special study work plan to the U.S. EPA Water Division Director within one year of the effective date of this Order and shall submit the special study final report with the application for permit reissuance.

8. Efficacy of Combined Sewer System Controls Special Study

By August 1, 2023, the Discharger shall submit a report to the Regional Water Board and U.S. EPA evaluating the quality of the combined sewer discharges and the efficacy of the combined sewer discharge controls during wet weather (i.e., control of solid and floatable

material in combined sewer discharges) at Discharge Point Nos. CSD-001, CSD-002, CSD-003, CSD-005, CSD-006, and CSD-007. At a minimum, the Discharger shall monitor for TSS, copper, lead, and zinc. The Discharger shall also evaluate floatables removal.

ATTACHMENT A – DEFINITIONS

Areas of Special Biological Significance (ASBS)
Areas designated by the State Water Resources Control Board as ocean areas requiring protection of species or biological communities to the extent that maintenance of natural water quality is assured. All Areas of Special Biological Significance are also classified as a subset of State Water Quality Protection Areas.

Average Monthly Effluent Limitation (AMEL)
Highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.

Average Weekly Effluent Limitation (AWEL)
Highest allowable average of daily discharges over a calendar week (Sunday through Saturday), calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week.

Bioaccumulative
Taken up by an organism from its surrounding medium through gill membranes, epithelial tissue, or from food and subsequently concentrated and retained in the body of the organism.

Chlordane
Sum of chlordane-alpha, chlordane-gamma, chlordene-alpha, chlordene-gamma, nonachlor-alpha, nonachlor-gamma, and oxychlordane.

Combined Sewer Discharge
Authorized combined sewer overflow during a wet weather day from an approved combined sewer discharge point. Table 2 of the Order lists approved combined sewer discharge points.

Combined Sewer Discharge Event
Discharge from one or more approved combined sewer discharge points during wet weather separated by at least six hours from any other combined sewer discharge event. Table 2 of the Order lists approved combined sewer discharge points.

Combined Sewer Overflow
The *Combined Sewer Overflow (CSO) Control Policy* defines a combined sewer overflow as the discharge from a combined sewer system at a point prior to the POTW's treatment plant.

Daily Discharge
Either: (1) total mass of the constituent discharged over a calendar day (12:00 a.m. through 11:59 p.m.) or any 24-hour period that reasonably represents a calendar day for purposes of sampling (as specified in the permit) for a constituent with limitations expressed in units of mass; or (2) unweighted arithmetic mean measurement of the constituent over a day for a constituent with limitations expressed in other units of measurement (e.g., concentration).

The daily discharge may be determined by the analytical results of a composite sample taken over the course of one day (a calendar day or other 24-hour period defined as a day) or by the arithmetic mean of analytical results from one or more grab samples taken over the course of a day.

For composite sampling, if a day is defined as a 24-hour period other than a calendar day, the analytical result for the 24-hour period will be considered as the result for the calendar day in which the 24-hour period ends.

DDT
Sum of 4,4'DDT, 2,4'DDT, 4,4'DDE, 2,4'DDE, 4,4'DDD, and 2,4'DDD.

Degrade
Degradation shall be determined by comparison of the waste field and reference site or sites for characteristic species diversity, population density, contamination, growth anomalies, debility, or supplanting of normal species by undesirable plant and animal species. Degradation occurs if there are significant differences in any of three major biotic groups, namely, demersal fish, benthic invertebrates, or attached algae. Other groups may be evaluated where benthic species are not affected, or are not the only ones affected.

Detected, but Not Quantified (DNQ)
Sample results that are less than the reported Minimum Level, but greater than or equal to the laboratory's method detection limit (MDL). Sample results reported as DNQ are estimated concentrations.

Dichlorobenzenes
Sum of 1,2-dichlorobenzene and 1,3-dichlorobenzene.

Dilution Credit
Amount of dilution granted to a discharge in the calculation of a water quality-based effluent limitation based on the allowance of a specified mixing zone. It is calculated from the dilution ratio, or determined by conducting a mixing zone study or modeling the discharge and receiving water.

Downstream Ocean Waters
Waters downstream with respect to ocean currents.

Dredged Material
Any material excavated or dredged from the navigable waters of the United States, including material otherwise referred to as "spoil."

Dry Weather
Any weather not defined as wet weather (determined on a day-by-day basis).

Effective Concentration (EC)
Point estimate of the toxicant concentration that would cause an adverse effect on a quantal, "all or nothing," response (such as death, immobilization, or serious incapacitation) in a given percent of the test organisms. If the effect is death or immobility, the term lethal concentration (LC) may be used. EC values may be calculated using point estimation techniques such as probit, logit, and Spearman-

Karber. EC_{25} is the concentration of toxicant (in percent effluent) that causes a response in 25 percent of the test organisms.

Enclosed Bays
Indentations along the coast that enclose an area of oceanic water within distinct headlands or harbor works. Enclosed bays include all bays where the narrowest distance between headlands or outermost harbor works is less than 75 percent of the greatest dimension of the enclosed portion of the bay. This definition includes, but is not limited to, Humboldt Bay, Bodega Harbor, Tomales Bay, Drakes Estero, San Francisco Bay, Morro Bay, Los Angeles Harbor, Upper and Lower Newport Bay, Mission Bay, and San Diego Bay.

Endosulfan
Sum of endosulfan-alpha, endosulfan-beta, and endosulfan sulfate.

Estuaries and Coastal Lagoons
Waters at the mouths of streams that serve as mixing zones for fresh and ocean waters during a major portion of the year. Mouths of streams that are temporarily separated from the ocean by sandbars shall be considered as estuaries. Estuarine waters will generally be considered to extend from a bay or the open ocean to the upstream limit of tidal action but may be considered to extend seaward if significant mixing of fresh and salt water occurs in the open coastal waters. The waters described by this definition include, but are not limited to, the Sacramento-San Joaquin Delta as defined by California Water Code section 12220, Suisun Bay, Carquinez Strait downstream to Carquinez Bridge, and appropriate areas of the Smith, Klamath, Mad, Eel, Noyo, and Russian Rivers.

Halomethanes
Sum of bromoform, bromomethane (methyl bromide), and chloromethane (methyl chloride).

HCH
Sum of the alpha, beta, gamma (lindane), and delta isomers of hexachlorocyclohexane.

Initial Dilution
Process that results in the rapid and irreversible turbulent mixing of wastewater with ocean water around the point of discharge.

For a submerged buoyant discharge, characteristic of most municipal and industrial wastes that are released from the submarine outfalls, the momentum of the discharge and its initial buoyancy act together to produce turbulent mixing. Initial dilution in this case is completed when the diluting wastewater ceases to rise in the water column and first begins to spread horizontally.

For shallow water submerged discharges, surface discharges, and non-buoyant discharges, characteristic of cooling water wastes and some individual discharges, turbulent mixing results primarily from the momentum of discharge. Initial dilution, in these cases, is considered to be completed when the momentum induced velocity of the discharge ceases to produce significant mixing of the waste, or the diluting plume reaches a fixed distance from the discharge to be specified by the Regional Water Board, whichever results in the lower estimate for initial dilution.

Instantaneous Maximum Effluent Limitation
Highest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous maximum limitation).

Instantaneous Minimum Effluent Limitation
Lowest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous minimum limitation).

In-Stream Waste Concentration (IWC)
The concentration of a toxicant in the receiving water after mixing.

Kelp Beds
For purposes of the Ocean Plan bacteriological standards, significant aggregations of marine algae of the genera *Macrocystis* and *Nereocystis*. Kelp beds include the total foliage canopy of *Macrocystis* and *Nereocystis* plants throughout the water column.

Mariculture
Culture of plants and animals in marine waters independent of any pollution source.

Material
(a) In common usage: (1) the substance or substances of which a thing is made or composed, (2) substantial;

(b) For Ocean Plan purposes relating to waste disposal, dredging, and the disposal of dredged material and fill: matter of any kind or description that is subject to regulation as waste or any material dredged from the navigable waters of the United States. See “dredged material.”

Maximum Daily Effluent Limitation (MDEL)
Highest allowable daily discharge of a pollutant.

Method Detection Limit (MDL)
Minimum concentration of a substance that can be reported with 99 percent confidence that the measured concentration is distinguishable from method blank results, as defined in 40 C.F.R. part 136, Appendix B.

Minimum Level (ML)
Concentration at which the entire analytical system must give a recognizable signal and acceptable calibration point. The ML is the concentration in a sample that is equivalent to the concentration of the lowest calibration standard analyzed by a specific analytical procedure, assuming that all the method specified sample weights, volumes, and processing steps have been followed.

Natural Light
Reduction of natural light may be determined by measurement of light transmissivity or total irradiance, or both, according to the monitoring needs of the Regional Water Board or U.S. EPA.

No Observed Effect Concentration (NOEC)
Highest tested concentration of an effluent or a toxicant at which no adverse effects are observed on the aquatic test organisms at a specific time of observation. It is determined using hypothesis testing.

Not Detected (ND)
Sample results less than the laboratory's MDL.

PAHs (polynuclear aromatic hydrocarbons)
Sum of acenaphthylene, anthracene, 1,2-benzanthracene, 3,4-benzofluoranthene, benzo[k]fluoranthene, 1,12-benzoperylene, benzo[a]pyrene, chrysene, dibenzo[ah]anthracene, fluorene, indeno[1,2,3-cd]pyrene, phenanthrene, and pyrene.

PCBs (polychlorinated biphenyls)
Sum of chlorinated biphenyls whose analytical characteristics resemble those of Aroclor-1016, Aroclor-1221, Aroclor-1232, Aroclor-1242, Aroclor-1248, Aroclor-1254, and Aroclor-1260.

Pollutant Minimization Program (PMP)
Waste minimization and pollution prevention actions that include, but are not limited to, product substitution, waste stream recycling, alternative waste management methods, and education of the public and businesses. The PMP goal shall be to reduce potential sources through pollutant minimization (control) strategies, including pollution prevention measures as appropriate, to maintain the effluent concentration at or below the water quality-based effluent limitation. Pollution prevention measures may be particularly appropriate for persistent bioaccumulative priority pollutants where there is evidence that beneficial uses are being impacted. The Regional Water Board and U.S. EPA may consider cost effectiveness when establishing PMP requirements. The completion and implementation of a Pollution Prevention Plan, if required pursuant to Water Code section 13263.3(d), fulfill the PMP requirements.

Reporting Level (RL)
Minimum Level (ML) and its associated analytical method chosen by the Discharger for reporting and compliance determination from the MLs included in this Order, including an additional factor if applicable as discussed herein (also known as the "Reported Minimum Level"). The MLs included in this Order correspond to approved analytical methods for reporting a sample result that are selected either from Ocean Plan Appendix II in accordance with Ocean Plan chapter III.C.5.a or established in accordance with Ocean Plan chapter III.C.5.b. The ML is based on the proper application of method-based analytical procedures for sample preparation and the absence of any matrix interferences. Other factors may be applied to the ML depending on the specific sample preparation steps employed. For example, the treatment typically applied in cases where there are matrix-effects is to dilute the sample or sample aliquot by a factor of ten. In such cases, this additional factor must be applied to the ML in the computation of the RL.

Sewer Overflow from the Combined Sewer System
Release or diversion of untreated or partially-treated wastewater or combined wastewater and stormwater from the combined sewer collection system. Sewer overflows from the combined sewer system can occur in public rights of way or on private property. Sewer overflows from the combined sewer system do not include releases due to failures in privately-owned sewer laterals or authorized combined sewer discharges at Discharge Point Nos. CSD-001, CSD-002, CSD-003, CSD-004, CSD-005, CSD-006, or CSD-007.

Shellfish
Organisms identified by the California Department of Public Health as shellfish for public health purposes (i.e., mussels, clams and oysters).

Significant Difference
Statistically significant difference in the means of two distributions of sampling results at the 95 percent confidence level.

Six-Month Median Effluent Limitation
Highest allowable moving median of all daily discharges for any 180-day period.

State Water Quality Protection Areas (SWQPAs)
Non-terrestrial marine or estuarine areas designated to protect marine species or biological communities from an undesirable alteration in natural water quality. All "Areas of Special Biological Significance" (ASBS) previously designated by the State Water Board in Resolutions 74-28, 74-32, and 75-61 are now also classified as a subset of SWQPAs and require the special protections the Ocean Plan affords.

TCDD Equivalents
Sum of the concentrations of chlorinated dibenzodioxins (2,3,7,8-CDDs) and chlorinated dibenzofurans (2,3,7,8-CDFs) multiplied by their respective Toxicity Equivalency Factors (TEFs) and Bioaccumulation Equivalency Factors (BEFs), as defined in Table A-1. When calculating TCDD Equivalents, the Discharger shall set congener concentrations below the minimum levels to zero. This approach is based on 40 C.F.R. part 132, Appendix F, Procedure 4, Tables 1 and 2, and TEFs listed in the Ocean Plan. This TCDD equivalents definition supersedes the dioxin-TEQ definition in Attachment G section V.C.1.d.iv.

Table A-1. Minimum Levels, Toxicity Equivalency Factors, and Bioaccumulation Equivalency Factors

Isomer Group	Minimum Level (pg/L)	Toxicity Equivalency Factor (TEF)	Bioaccumulation Equivalency Factor (BEF)
2,3,7,8-TCDD	10	1.0	1.0
1,2,3,7,8-PeCDD	50	0.5	0.9
1,2,3,4,7,8-HxCDD	50	0.1	0.3
1,2,3,6,7,8-HxCDD	50	0.1	0.1
1,2,3,7,8,9-HxCDD	50	0.1	0.1
1,2,3,4,6,7,8-HpCDD	50	0.01	0.05
OCDD	100	0.001	0.01
2,3,7,8-TCDF	10	0.1	0.8
1,2,3,7,8-PeCDF	50	0.05	0.2
2,3,4,7,8-PeCDF	50	0.5	1.6
1,2,3,4,7,8-HxCDF	50	0.1	0.08
1,2,3,6,7,8-HxCDF	50	0.1	0.2
1,2,3,7,8,9-HxCDF	50	0.1	0.6
2,3,4,6,7,8-HxCDF	50	0.1	0.7
1,2,3,4,6,7,8-HpCDF	50	0.01	0.01
1,2,3,4,7,8,9-HpCDF	50	0.01	0.4
OCDF	100	0.001	0.02

Test of Significant Toxicity (TST)
A statistical approach used to analyze toxicity test data. The TST statistical approach is described in *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document* (EPA 833-R-10-003, 2010).

Toxicity Reduction Evaluation (TRE)
Study conducted in a step-wise process designed to identify the causative agents of effluent or ambient toxicity, isolate the sources of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in toxicity. The first steps of the TRE consist of the collection of data relevant to the toxicity, including additional toxicity testing, and an evaluation of facility operations and maintenance practices, and best management practices. A Toxicity Identification Evaluation (TIE) may be required as part of the TRE, if appropriate. (A TIE is a set of procedures to identify the specific chemical or chemicals responsible for toxicity. These procedures are performed in three phases (characterization, identification, and confirmation) using aquatic organism toxicity tests.)

Waste
As used in the Ocean Plan, a Discharger's total discharge, of whatever origin (i.e., gross, not net, discharge).

Water Recycling
Treatment of wastewater to render it suitable for reuse, the transportation of treated wastewater to the place of use, and the actual use of treated wastewater for a direct beneficial use or controlled use that would not otherwise occur.

Wet Weather
Weather in which any one of the following conditions exists as a result of rain (determined on a day-by-day basis):

1. Instantaneous influent flow to the Oceanside Water Pollution Control Plant exceeds 43 MGD; or

2. Average daily influent concentration of TSS is less than 100 mg/L; or

3. Westside Transport/Storage Structure flow elevation exceeds 0 feet in the West Box or 18 feet in the East Box. (Flow from the East Box to the West Box occurs only when the East Box storage level exceeds 18 feet.)

ATTACHMENT B – FACILITY AND RECEIVING WATER MAPS

Figure B-1. Facility Overview Map

The Facility subject to this Order is shown in light red (western area) and includes the Oceanside Water Pollution Control Plant, wastewater collection system, and Westside Recycled Water Project. The Southeast Water Pollution Control Plant, North Point Wet Weather Facility, and Bayside Wet Weather Facilities are shown only for reference in light green (eastern area).

Figure B-2. Topographical Map

Scale: 1 inch = 24,000 inches (2,000 feet). Contour interval: 20 feet.
North American Vertical Datum of 1988.

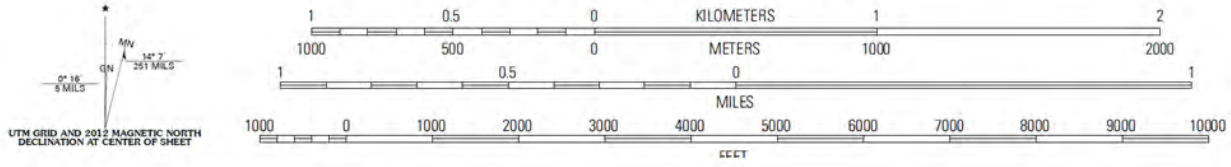


Figure B-3. Oceanside Water Pollution Control Plant Map

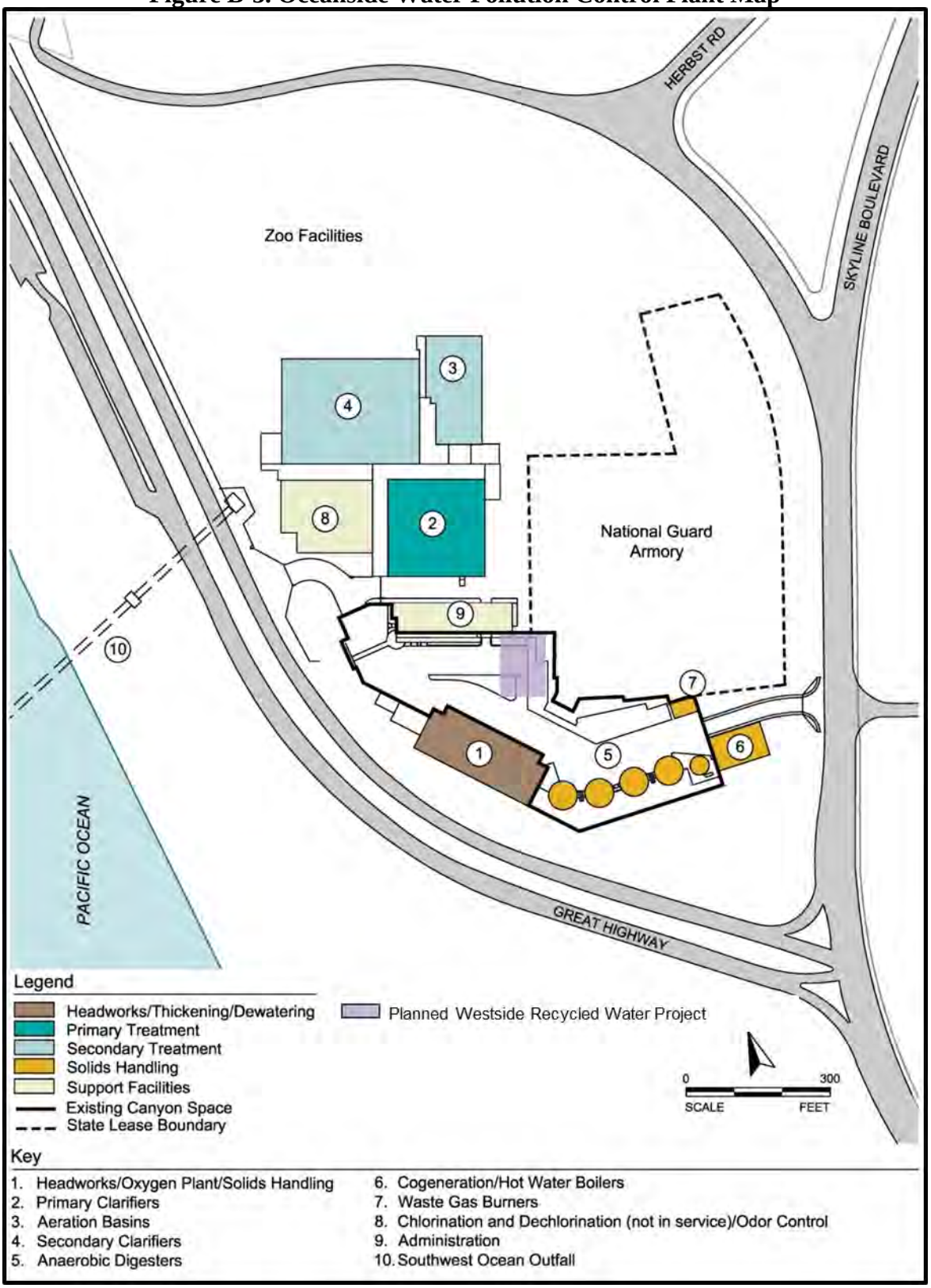


Figure B-4. Combined Sewer Discharge and Pump Station Locations

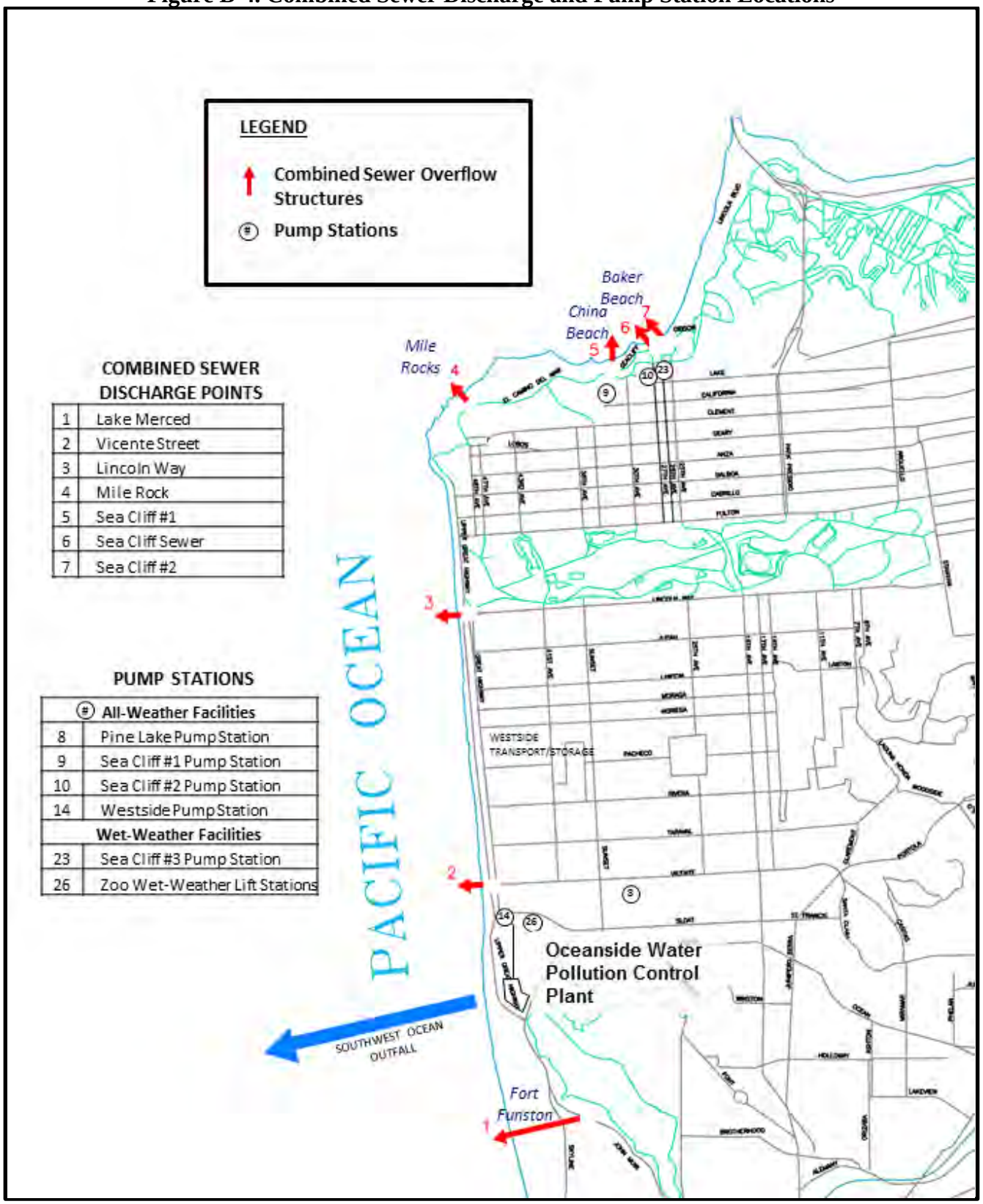


Figure B-5. Combined Sewer Discharge and Transport/Storage Structure Locations

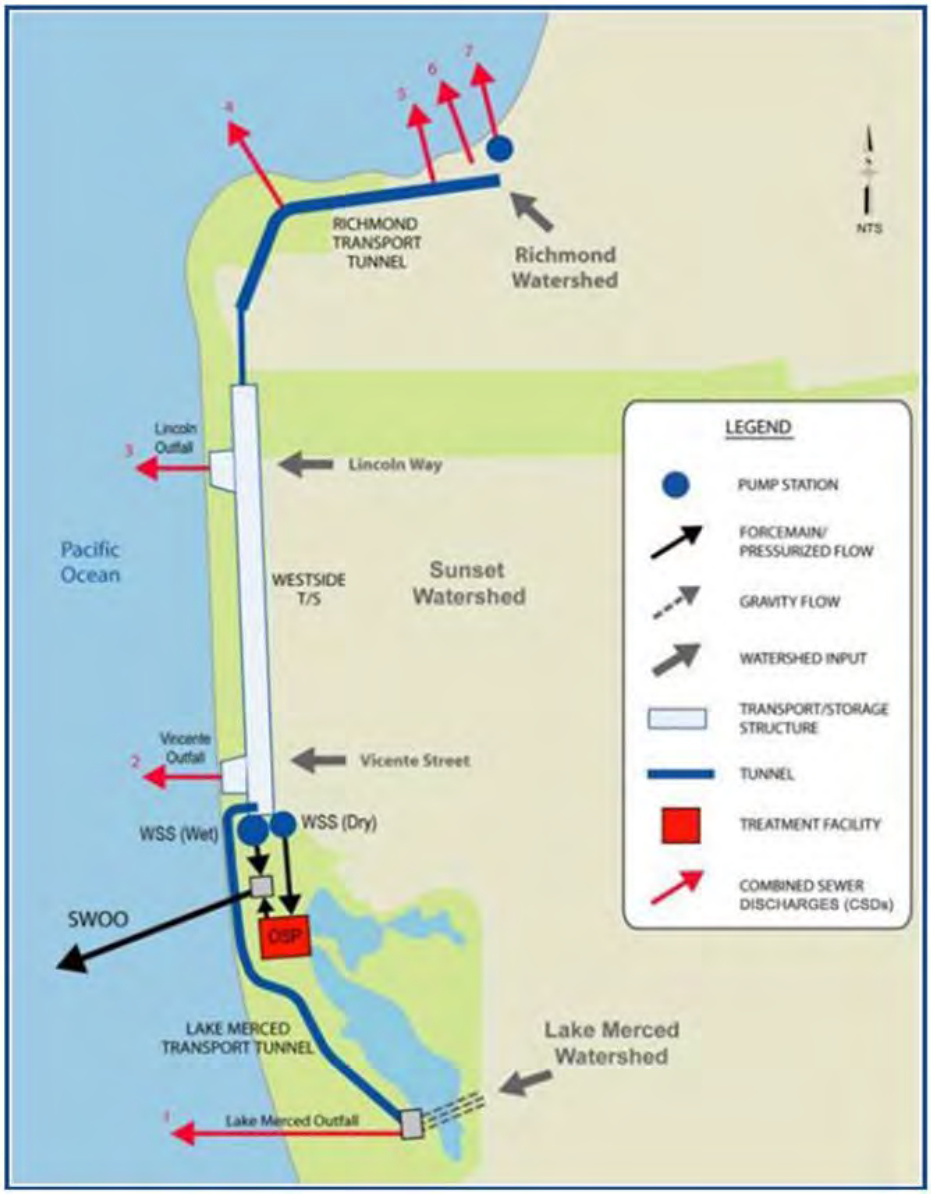
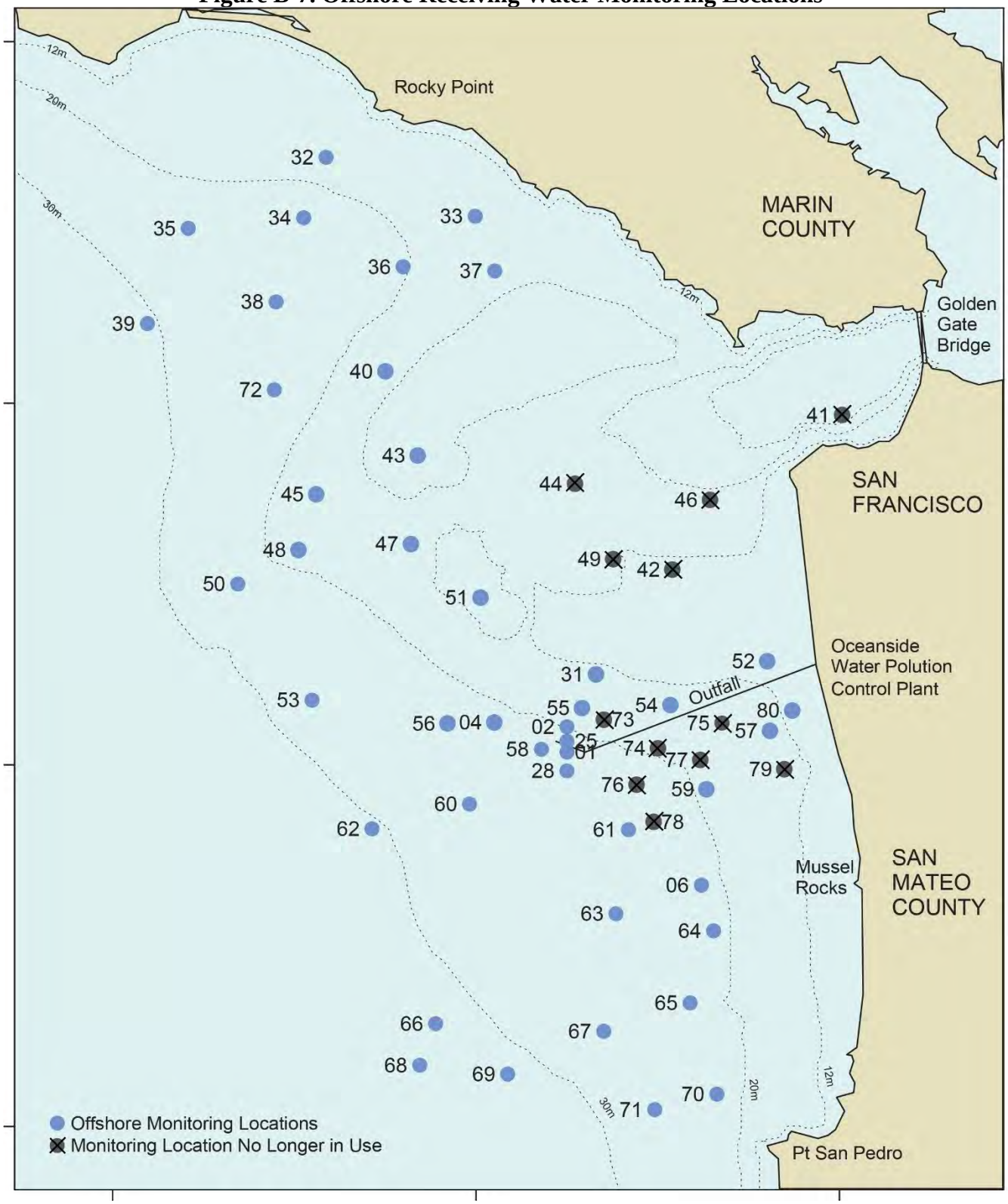


Figure B-6. Shoreline Receiving Water Monitoring Locations

Figure B-7. Offshore Receiving Water Monitoring Locations



ATTACHMENT C – PROCESS FLOW SCHEMATICS

Figure C-1. Oceanside Water Pollution Control Plant Process Flow

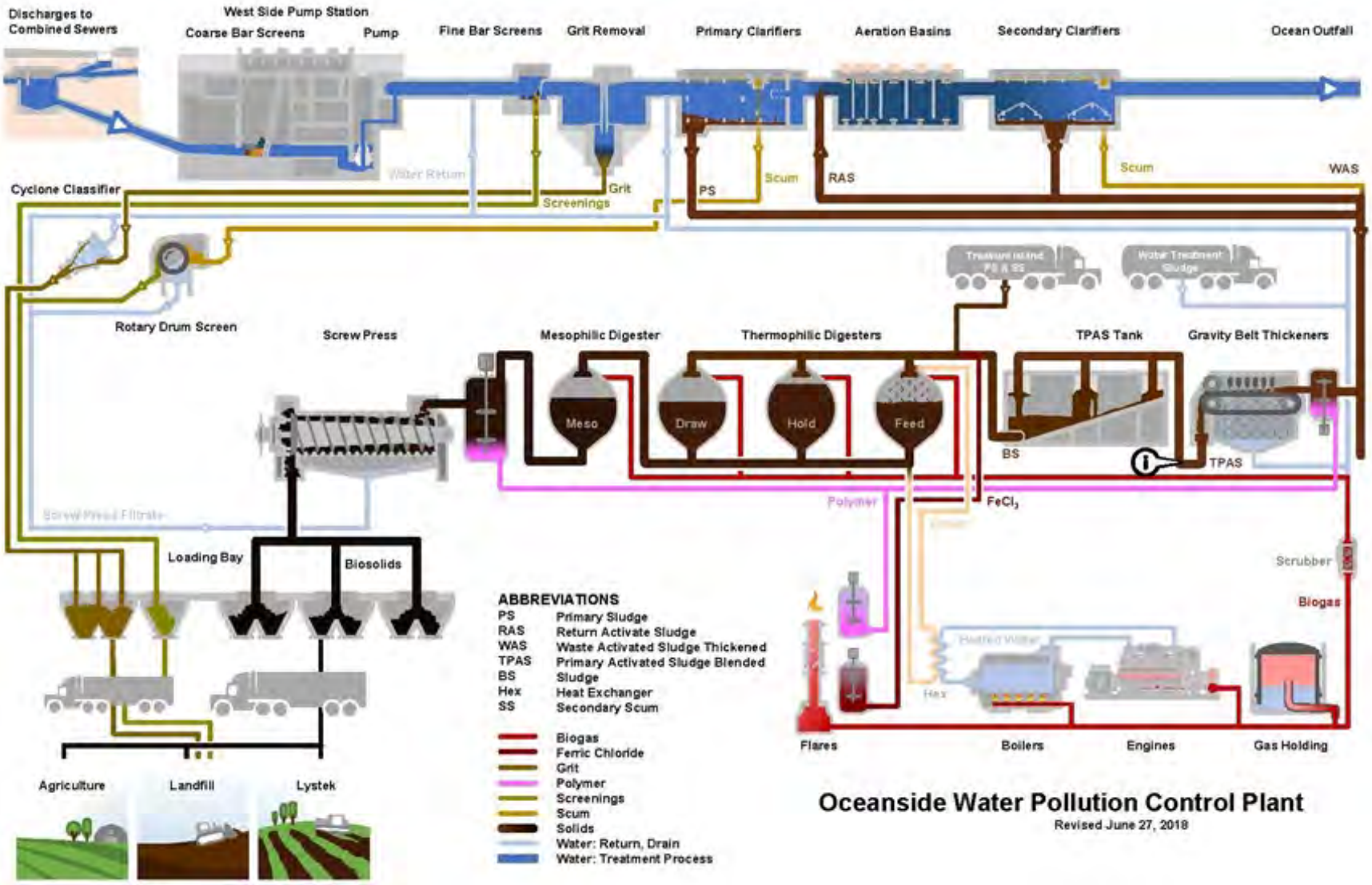
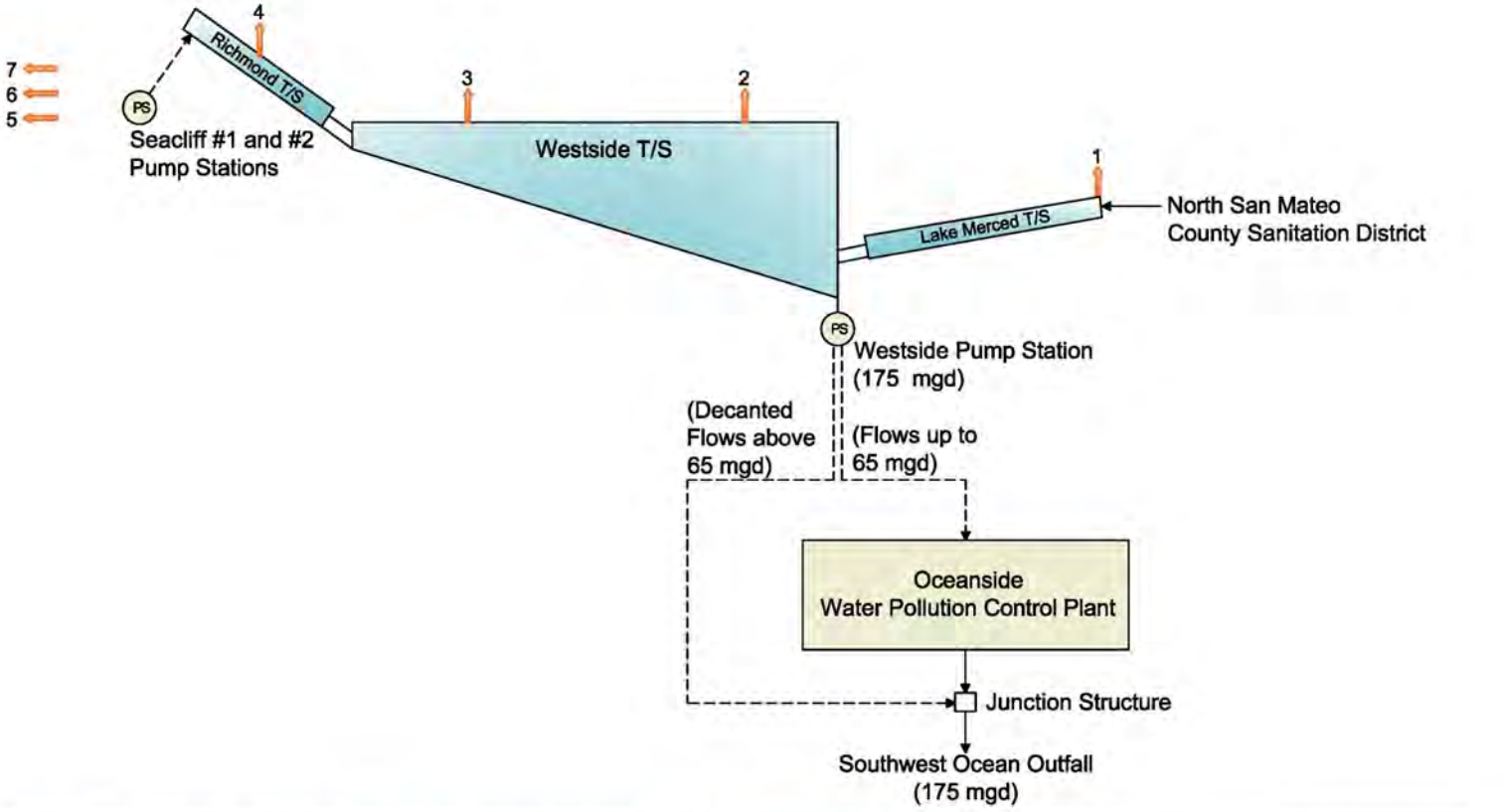


Figure C-2. Oceanside Water Pollution Control Plant Wet Weather Operations



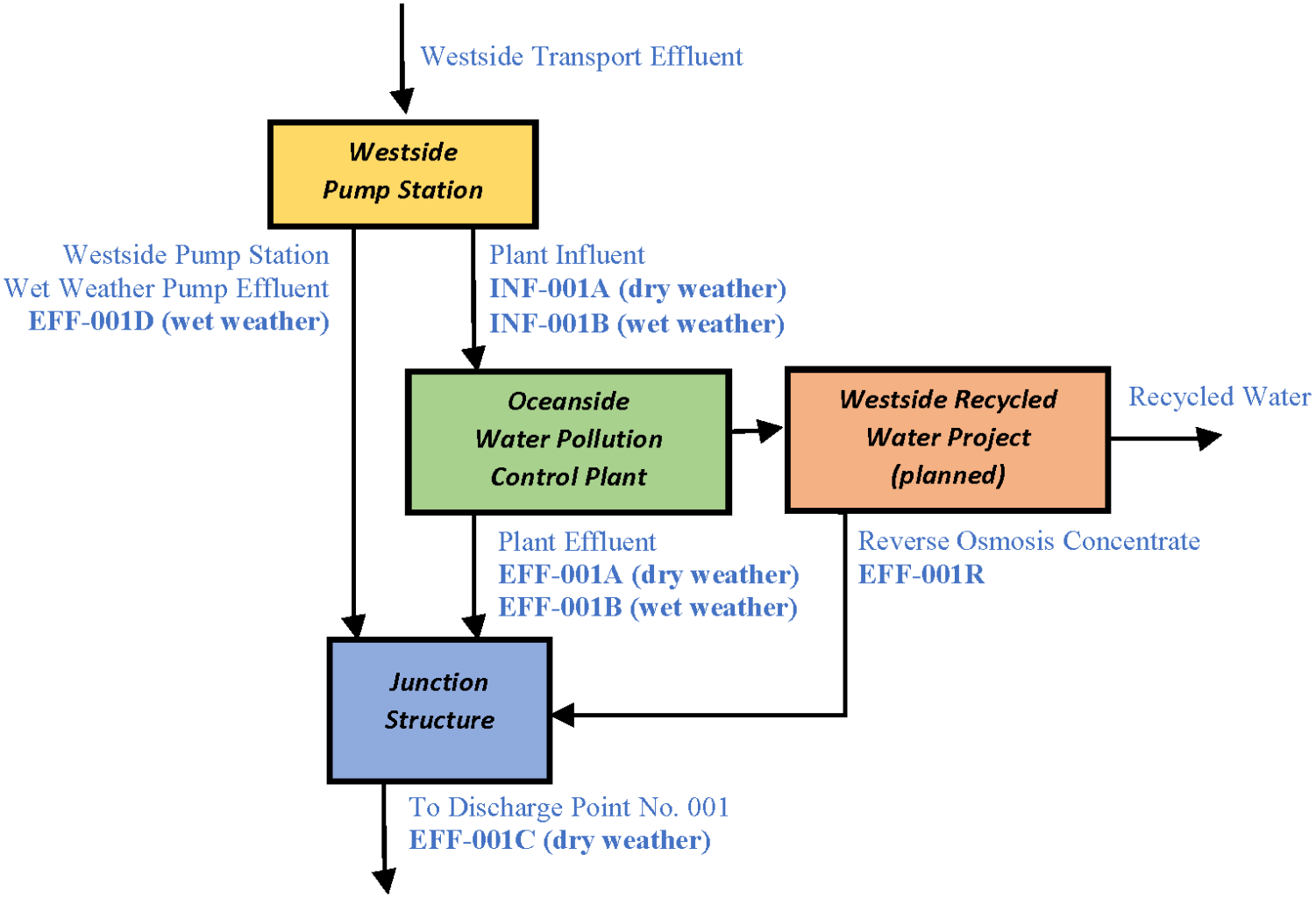
Pump/Lift Stations	
Peak Wet-Weather Flows (mgd)	
Name	
Seacliff #1	0.005
Seacliff #2	0.090
Westside	175.000

CSD Number and Name
CSD-001 Lake Merced
CSD-002 Vicente Street
CSD-003 Lincoln Way
CSD-004 Mile Rock
CSD-005 Seacliff #1 PS
CSD-006 Seacliff
CSD-007 Seacliff #2 PS

Transport/Storage Structures	
Name	Usable Storage (MG)
Richmond Transport	12.0
Westside Transport	49.3
Lake Merced Transport	10.0

Legend	
CSD	Combined Sewer Discharge
MG	million gallons
mgd	million gallons per day
T/S	Transport/Storage Structure
--→	Force Main
→	Gravity Flow Lines
#	Combined Sewer Discharge
PS	Pump Station

Figure C-3. Oceanside Water Pollution Control Plant and Planned Westside Recycled Water Project Monitoring Locations (see Monitoring and Reporting Program [MRP] Table E-1 in Attachment E of this Order for monitoring location descriptions)



ATTACHMENT D – STANDARD PROVISIONS

I. STANDARD PROVISIONS—PERMIT COMPLIANCE

A. Duty to Comply

1. The Discharger must comply with all of the terms, requirements, and conditions of this Order. Any noncompliance constitutes a violation of the Clean Water Act (CWA) and the California Water Code and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application; or a combination thereof. (40 C.F.R. § 122.41(a); Wat. Code §§ 13261, 13263, 13265, 13268, 13000, 13001, 13304, 13350, 13385.)

2. The Discharger shall comply with effluent standards or prohibitions established under CWA section 307(a) for toxic pollutants within the time provided in the regulations that establish these standards or prohibitions, even if this Order has not yet been modified to incorporate the requirement. (40 C.F.R. § 122.41(a)(1).)

B. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for a Discharger in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this Order. (40 C.F.R. § 122.41(c).)

C. Duty to Mitigate

The Discharger shall take all reasonable steps to minimize or prevent any discharge in violation of this Order that has a reasonable likelihood of adversely affecting human health or the environment. (40 C.F.R. § 122.41(d).)

D. Proper Operation and Maintenance

The Discharger shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Discharger to achieve compliance with the conditions of this Order. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems that are installed by a Discharger only when necessary to achieve compliance with the conditions of this Order. (40 C.F.R. § 122.41(e).)

E. Property Rights

1. This Order does not convey any property rights of any sort or any exclusive privileges. (40 C.F.R. § 122.41(g).)

2. The issuance of this Order does not authorize any injury to persons or property or invasion of other private rights, or any infringement of state or local law or regulations. (40 C.F.R. § 122.5(c).)

F. Inspection and Entry

The Discharger shall allow the Regional Water Board, State Water Board, U.S. EPA, or their authorized representatives (including an authorized contractor acting as their representative), upon the presentation of credentials and other documents, as may be required by law, to (33 U.S.C. § 1318(a)(4)(B); 40 C.F.R. § 122.41(i); Wat. Code, §§ 13267, 13383):

1. Enter upon the Discharger's premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this Order (33 U.S.C. § 1318(a)(4)(B)(i); 40 C.F.R. § 122.41(i)(1); Wat. Code, §§ 13267, 13383);

2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order (33 U.S.C. § 1318(a)(4)(B)(ii); 40 C.F.R. § 122.41(i)(2); Wat. Code, §§ 13267, 13383);

3. Inspect and photograph, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order (33 U.S.C. § 1318(a)(4)(B)(ii); 40 C.F.R. § 122.41(i)(3); Wat. Code, §§ 13267, 13383); and

4. Sample or monitor, at reasonable times, for the purposes of assuring Order compliance or as otherwise authorized by the CWA or the Water Code, any substances or parameters at any location. (33 U.S.C. § 1318(a)(4)(B); 40 C.F.R. § 122.41(i)(4); Wat. Code, §§ 13267, 13383.)

G. Bypass

1. Definitions

a. "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility. (40 C.F.R. § 122.41(m)(1)(i).)

b. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities, which causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production. (40 C.F.R. § 122.41(m)(1)(ii).)

2. Bypass not exceeding limitations. The Discharger may allow any bypass to occur which does not cause exceedances of effluent limitations, but only if it is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions listed in Standard Provisions—Permit Compliance I.G.3, I.G.4, and I.G.5 below. (40 C.F.R. § 122.41(m)(2).)

3. **Prohibition of bypass.** Bypass is prohibited, and the Regional Water Board may take enforcement action against a Discharger for bypass, unless (40 C.F.R. § 122.41(m)(4)(i)):

   a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage (40 C.F.R. § 122.41(m)(4)(i)(A));

   b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventive maintenance (40 C.F.R. § 122.41(m)(4)(i)(B)); and

   c. The Discharger submitted notice to the Regional Water Board as required under Standard Provisions—Permit Compliance I.G.5 below. (40 C.F.R. § 122.41(m)(4)(i)(C).)

4. **Approval.** The Regional Water Board may approve an anticipated bypass, after considering its adverse effects, if the Regional Water Board determines that it will meet the three conditions listed in Standard Provisions—Permit Compliance I.G.3 above. (40 C.F.R. § 122.41(m)(4)(ii).)

5. **Notice**

   a. Anticipated bypass. If the Discharger knows in advance of the need for a bypass, it shall submit prior notice, if possible at least 10 days before the date of the bypass. The notice shall be sent to the Regional Water Board. As of December 21, 2020, a notice shall also be submitted electronically to the initial recipient defined in Standard Provisions—Reporting V.J below. Notices shall comply with 40 C.F.R. part 3, 40 C.F.R. section 122.22, and 40 C.F.R. part 127. (40 C.F.R. § 122.41(m)(3)(i).)

   b. Unanticipated bypass. The Discharger shall submit a notice of an unanticipated bypass as required in Standard Provisions—Reporting V.E below (24-hour notice). The notice shall be sent to the Regional Water Board. As of December 21, 2020, a notice shall also be submitted electronically to the initial recipient defined in Standard Provisions—Reporting V.J below. Notices shall comply with 40 C.F.R. part 3, 40 C.F.R. section 122.22, and 40 C.F.R. part 127. (40 C.F.R. § 122.41(m)(3)(ii).)

H. Upset

Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the Discharger. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation. (40 C.F.R. § 122.41(n)(1).)

1. **Effect of an upset.** An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of Standard Provisions—Permit Compliance I.H.2 below are met. No determination made

during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review. (40 C.F.R. § 122.41(n)(2).)

2. **Conditions necessary for a demonstration of upset.** A discharger who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence that (40 C.F.R. § 122.41(n)(3)):

   a. An upset occurred and that the Discharger can identify the cause(s) of the upset (40 C.F.R. § 122.41(n)(3)(i));

   b. The permitted facility was, at the time, being properly operated (40 C.F.R. § 122.41(n)(3)(ii));

   c. The Discharger submitted notice of the upset as required in Standard Provisions—Reporting V.E.2.b below (24-hour notice) (40 C.F.R. § 122.41(n)(3)(iii)); and

   d. The Discharger complied with any remedial measures required under Standard Provisions—Permit Compliance I.C above. (40 C.F.R. § 122.41(n)(3)(iv).)

3. **Burden of proof.** In any enforcement proceeding, the Discharger seeking to establish the occurrence of an upset has the burden of proof. (40 C.F.R. § 122.41(n)(4).)

II. STANDARD PROVISIONS—PERMIT ACTION

A. General

This Order may be modified, revoked and reissued, or terminated for cause. The filing of a request by the Discharger for modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any Order condition. (40 C.F.R. § 122.41(f).)

B. Duty to Reapply

If the Discharger wishes to continue an activity regulated by this Order after the expiration date of this Order, the Discharger must apply for and obtain a new permit. (40 C.F.R. § 122.41(b).)

C. Transfers

This Order is not transferable to any person except after notice to the Regional Water Board. The Regional Water Board may require modification or revocation and reissuance of the Order to change the name of the Discharger and incorporate such other requirements as may be necessary under the CWA and the Water Code. (40 C.F.R. §§ 122.41(l)(3), 122.61.)

III. STANDARD PROVISIONS—MONITORING

A. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. (40 C.F.R. § 122.41(j)(1).)

B. Monitoring must be conducted according to test procedures approved under 40 C.F.R. part 136 for the analyses of pollutants unless another method is required under 40 C.F.R. chapter 1, subchapter N. Monitoring must be conducted according to sufficiently sensitive test methods approved under 40 C.F.R. part 136 for the analysis of pollutants or pollutant parameters or required under 40 C.F.R. chapter 1, subchapter N . For the purposes of this paragraph, a method is sufficiently sensitive when:

1. The method minimum level (ML) is at or below the level of the effluent limitation established in the permit for the measured pollutant or pollutant parameter, and either (a) the method ML is at or below the level of the applicable water quality criterion for the measured pollutant or pollutant parameter, or (b) the method ML is above the applicable water quality criterion but the amount of the pollutant or pollutant parameter in a facility's discharge is high enough that the method detects and quantifies the level of the pollutant or pollutant parameter in the discharge; or

2. The method has the lowest ML of the analytical methods approved under 40 C.F.R. part 136 or required under 40 C.F.R. chapter 1, subchapter N, for the measured pollutant or pollutant parameter.

In the case of pollutants or pollutant parameters for which there are no approved methods under 40 C.F.R. part 136 or otherwise required under 40 C.F.R. chapter 1, subchapter N, monitoring must be conducted according to a test procedure specified in this Order for such pollutants or pollutant parameters. (40 C.F.R. §§ 122.21(e)(3), 122.41(j)(4), 122.44(i)(1)(iv).)

IV. STANDARD PROVISIONS—RECORDS

A. The Discharger shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the Regional Water Board Executive Officer at any time. (40 C.F.R. § 122.41(j)(2).)

B. Records of monitoring information shall include the following:

1. The date, exact place, and time of sampling or measurements (40 C.F.R. § 122.41(j)(3)(i));

2. The individual(s) who performed the sampling or measurements (40 C.F.R. § 122.41(j)(3)(ii));

3. The date(s) the analyses were performed (40 C.F.R. § 122.41(j)(3)(iii));

4. The individual(s) who performed the analyses (40 C.F.R. § 122.41(j)(3)(iv));

5. The analytical techniques or methods used (40 C.F.R. § 122.41(j)(3)(v)); and

6. The results of such analyses. (40 C.F.R. § 122.41(j)(3)(vi).)

C. Claims of confidentiality for the following information will be denied (40 C.F.R. § 122.7(b)):

1. The name and address of any permit applicant or Discharger (40 C.F.R. § 122.7(b)(1)); and

2. Permit applications and attachments, permits, and effluent data. (40 C.F.R. § 122.7(b)(2).)

V. STANDARD PROVISIONS—REPORTING

A. Duty to Provide Information

The Discharger shall furnish to the Regional Water Board, State Water Board, or U.S. EPA within a reasonable time, any information which the Regional Water Board, State Water Board, or U.S. EPA may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order or to determine compliance with this Order. Upon request, the Discharger shall also furnish to the Regional Water Board, State Water Board, or U.S. EPA copies of records required to be kept by this Order. (40 C.F.R. § 122.41(h); Wat. Code, §§ 13267, 13383.)

B. Signatory and Certification Requirements

1. All applications, reports, or information submitted to the Regional Water Board, State Water Board, and/or U.S. EPA shall be signed and certified in accordance with Standard Provisions—Reporting V.B.2, V.B.3, V.B.4, V.B.5, and V.B.6 below. (40 C.F.R. § 122.41(k).)

2. For a corporation, all permit applications shall be signed by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means: (i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures. (40 C.F.R. § 122.22(a)(1).)

For a partnership or sole proprietorship, all permit applications shall be signed by a general partner or the proprietor, respectively. (40 C.F.R. § 122.22(a)(2).)

For a municipality, State, federal, or other public agency, all permit applications shall be signed by either a principal executive officer or ranking elected official. For purposes of this provision, a principal executive officer of a federal agency includes (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of U.S. EPA). (40 C.F.R. § 122.22(a)(3).).

3. All reports required by this Order and other information requested by the Regional Water Board, State Water Board, or U.S. EPA shall be signed by a person described in Standard Provisions—Reporting V.B.2 above, or by a duly authorized representative of that person. A person is a duly authorized representative only if:

a. The authorization is made in writing by a person described in Standard Provisions—Reporting V.B.2 above (40 C.F.R. § 122.22(b)(1));

b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.) (40 C.F.R. § 122.22(b)(2)); and

c. The written authorization is submitted to the Regional Water Board and State Water Board. (40 C.F.R. § 122.22(b)(3).)

4. If an authorization under Standard Provisions—Reporting V.B.3 above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Standard Provisions—Reporting V.B.3 above must be submitted to the Regional Water Board and State Water Board prior to or together with any reports, information, or applications, to be signed by an authorized representative. (40 C.F.R. § 122.22(c).)

5. Any person signing a document under Standard Provisions—Reporting V.B.2 or V.B.3 above shall make the following certification:

> "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations." (40 C.F.R. § 122.22(d).)

6. Any person providing the electronic signature for documents described in Standard Provisions—V.B.1, V.B.2, or V.B.3 that are submitted electronically shall meet all relevant requirements of Standard Provisions—Reporting V.B, and shall ensure that all relevant requirements of 40 C.F.R. part 3 (Cross-Media Electronic Reporting) and 40 C.F.R. part 127 (NPDES Electronic Reporting Requirements) are met for that submission. (40 C.F.R § 122.22(e).)

C. Monitoring Reports

1. Monitoring results shall be reported at the intervals specified in the Monitoring and Reporting Program in this Order. (40 C.F.R. § 122.22(l)(4).)

2. Monitoring results must be reported on a Discharge Monitoring Report (DMR) form or forms provided or specified by the Regional Water Board or State Water Board. As of December 21, 2016, all reports and forms must be submitted electronically to the initial recipient defined in Standard Provisions—Reporting V.J and comply with 40 C.F.R. part 3, 40 C.F.R. section 122.22, and 40 C.F.R. part 127. (40 C.F.R. § 122.41(l)(4)(i).)

3. If the Discharger monitors any pollutant more frequently than required by this Order using test procedures approved under 40 C.F.R. part 136, or another method required for an industry-specific waste stream under 40 C.F.R. chapter 1, subchapter N, the results of such monitoring shall be included in the calculation and reporting of the data submitted in the DMR reporting form specified by the Regional Water Board or State Water Board. (40 C.F.R. § 122.41(l)(4)(ii).)

4. Calculations for all limitations, which require averaging of measurements, shall utilize an arithmetic mean unless otherwise specified in this Order. (40 C.F.R. § 122.41(l)(4)(iii).)

D. Compliance Schedules

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this Order, shall be submitted no later than 14 days following each schedule date. (40 C.F.R. § 122.41(l)(5).)

E. Twenty-Four Hour Reporting

1. The Discharger shall report any noncompliance that may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the Discharger becomes aware of the circumstances. A written report shall also be provided within five (5) days of the time the Discharger becomes aware of the circumstances. The written report shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

For noncompliance related to combined sewer overflows, sanitary sewer overflows, or bypass events, these reports must include the data described above (with the exception of time of discovery) as well as the type of event (i.e., combined sewer overflow, sanitary sewer overflow, or bypass event), type of overflow structure (e.g., manhole, combined sewer overflow outfall), discharge volume untreated by the treatment works treating domestic sewage, types of human health and environmental impacts of the event, and whether the noncompliance was related to wet weather.

As of December 21, 2020, all reports related to combined sewer overflows, sanitary sewer overflows, or bypass events must be submitted to the Regional Water Board and must be

submitted electronically to the initial recipient defined in Standard Provisions—Reporting V.J. The reports shall comply with 40 C.F.R. part 3, 40 C.F.R. section 122.22, and 40 C.F.R. part 127. The Regional Water Board may also require the Discharger to electronically submit reports not related to combined sewer overflows, sanitary sewer overflows, or bypass events under this section. (40 C.F.R. § 122.41(l)(6)(i).)

2. The following shall be included as information that must be reported within 24 hours:

a. Any unanticipated bypass that exceeds any effluent limitation in this Order. (40 C.F.R. § 122.41(l)(6)(ii)(A).)

b. Any upset that exceeds any effluent limitation in this Order. (40 C.F.R. § 122.41(l)(6)(ii)(B).)

3. The Regional Water Board may waive the above-required written report under this provision on a case-by-case basis if an oral report has been received within 24 hours. (40 C.F.R. § 122.41(l)(6)(iii).)

F. Planned Changes

The Discharger shall give notice to the Regional Water Board as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required under this provision only when (40 C.F.R. § 122.41(l)(1)):

1. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 C.F.R. section 122.29(b) (40 C.F.R. § 122.41(l)(1)(i)); or

2. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are not subject to effluent limitations in this Order. (Alternatively, for an existing manufacturing, commercial, mining, or silvicultural discharge as referenced in 40 C.F.R. section 122.42(a), this notification applies to pollutants that are subject neither to effluent limitations in this Order nor to notification requirements under 40 C.F.R. section 122.42(a)(1) (see Additional Provisions—Notification Levels VII.A.1).) (40 C.F.R. § 122.41(l)(1)(ii).)

G. Anticipated Noncompliance

The Discharger shall give advance notice to the Regional Water Board or State Water Board of any planned changes in the permitted facility or activity that may result in noncompliance with this Order's requirements. (40 C.F.R. § 122.41(l)(2).)

H. Other Noncompliance

The Discharger shall report all instances of noncompliance not reported under Standard Provisions—Reporting V.C, V.D, and V.E above at the time monitoring reports are submitted. The reports shall contain the information listed in Standard Provisions—Reporting V.E above. For noncompliance related to combined sewer overflows, sanitary sewer overflows, or bypass events, these reports shall contain the information described in Standard Provisions—

Reporting V.E and the applicable required data in appendix A to 40 C.F.R. part 127. The Regional Water Board may also require the Discharger to electronically submit reports not related to combined sewer overflows, sanitary sewer overflows, or bypass events under this section. (40 C.F.R. § 122.41(l)(7).)

I. Other Information

When the Discharger becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Regional Water Board, State Water Board, or U.S. EPA, the Discharger shall promptly submit such facts or information. (40 C.F.R. § 122.41(l)(8).)

J. Initial Recipient for Electronic Reporting Data

The owner, operator, or duly authorized representative is required to electronically submit NPDES information specified in appendix A to 40 C.F.R. part 127 to the initial recipient defined in 40 C.F.R. section 127.2(b). U.S. EPA will identify and publish the list of initial recipients on its website and in the Federal Register, by state and by NPDES data group (see 40 C.F.R. § 127.2(c)). U.S. EPA will update and maintain this list. (40 C.F.R. § 122.41(l)(9).)

VI. STANDARD PROVISIONS—ENFORCEMENT

A. The Regional Water Board is authorized to enforce the terms of this Order under several provisions of the Water Code, including, but not limited to, sections 13268, 13350, 13385, 13386, and 13387.

VII. ADDITIONAL PROVISIONS—NOTIFICATION LEVELS

A. Non-Municipal Facilities

Existing manufacturing, commercial, mining, and silvicultural dischargers shall notify the Regional Water Board as soon as they know or have reason to believe (40 C.F.R. § 122.42(a)):

1. That any activity has occurred or will occur that would result in the discharge, on a routine or frequent basis, of any toxic pollutant that is not limited in this Order, if that discharge will exceed the highest of the following "notification levels" (40 C.F.R. § 122.42(a)(1)):

a. 100 micrograms per liter (µg/L) (40 C.F.R. § 122.42(a)(1)(i));

b. 200 µg/L for acrolein and acrylonitrile; 500 µg/L for 2,4-dinitrophenol and 2-methyl-4,6-dinitrophenol; and 1 milligram per liter (mg/L) for antimony (40 C.F.R. § 122.42(a)(1)(ii));

c. Five (5) times the maximum concentration value reported for that pollutant in the Report of Waste Discharge (40 C.F.R. § 122.42(a)(1)(iii)); or

d. The level established by the Regional Water Board in accordance with section 40 C.F.R. section 122.44(f). (40 C.F.R. § 122.42(a)(1)(iv).)

2. That any activity has occurred or will occur that would result in the discharge, on a non-routine or infrequent basis, of any toxic pollutant that is not limited in this Order, if that discharge will exceed the highest of the following "notification levels" (40 C.F.R. § 122.42(a)(2)):

a. 500 micrograms per liter (µg/L) (40 C.F.R. § 122.42(a)(2)(i));

b. 1 milligram per liter (mg/L) for antimony (40 C.F.R. § 122.42(a)(2)(ii));

c. Ten (10) times the maximum concentration value reported for that pollutant in the Report of Waste Discharge (40 C.F.R. § 122.42(a)(2)(iii)); or

d. The level established by the Regional Water Board in accordance with 40 C.F.R. section 122.44(f). (40 C.F.R. § 122.42(a)(2)(iv).)

B. Publicly-Owned Treatment Works (POTWs)

All POTWs shall provide adequate notice to the Regional Water Board of the following (40 C.F.R. § 122.42(b)):

1. Any new introduction of pollutants into the POTW from an indirect discharger that would be subject to CWA sections 301 or 306 if it were directly discharging those pollutants (40 C.F.R. § 122.42(b)(1)); and

2. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of adoption of this Order. (40 C.F.R. § 122.42(b)(2).)

3. Adequate notice shall include information on the quality and quantity of effluent introduced into the POTW as well as any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW. (40 C.F.R. § 122.42(b)(3).)

ATTACHMENT E – MONITORING AND REPORTING PROGRAM

Contents

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ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)

Clean Water Act section 308 and 40 C.F.R. sections 122.41(h), 122.41(j)-(l), 122.44(i), and 122.48 require that all NPDES permits specify monitoring and reporting requirements. Water Code sections 13267 and 13383 also authorize the Regional Water Board to establish monitoring, inspection, entry, reporting, and recordkeeping requirements. This MRP establishes monitoring, reporting, and recordkeeping requirements that implement federal and State laws and regulations.

I. GENERAL MONITORING PROVISIONS

A. The Discharger shall comply with this MRP. The Regional Water Board Executive Officer and U.S. EPA may amend this MRP pursuant to 40 C.F.R. sections 122.62, 122.63, and 124.5. If any discrepancies exist between this MRP and the "Regional Standard Provisions, and Monitoring and Reporting Requirements (Supplement to Attachment D) for NPDES Wastewater Discharge Permits" (Attachment G), this MRP shall prevail.

B. The Discharger shall conduct all monitoring in accordance with Attachment D section III, as supplemented by Attachment G. Equivalent test methods must be more sensitive than those specified in 40 C.F.R. part 136 and must be specified in this permit.

C. The Discharger shall ensure that results of the Discharge Monitoring Report-Quality Assurance (DMR-QA) Study or most recent Water Pollution Performance Evaluation Study are submitted annually to the State Water Board at the following address or as otherwise directed:

State Water Resources Control Board
Quality Assurance Program Officer
Office of Information Management and Analysis
1001 I Street, Sacramento, CA 95814

D. The Discharger shall implement a Quality Assurance-Quality Control Program for any onsite field tests (e.g., turbidity, pH, temperature, dissolved oxygen, conductivity, disinfectant residual) analyzed by a noncertified laboratory. The Discharger shall keep a manual onsite containing the steps followed in this program and must demonstrate sufficient capability to adequately perform these field tests (e.g., qualified and trained employees, properly calibrated and maintained field instruments). The program shall conform to U.S. EPA guidelines or other approved procedures.

II. MONITORING LOCATIONS

The Discharger shall establish the following monitoring locations to demonstrate compliance with the effluent limitations, discharge specifications, and other requirements in this Order:

Table E-1. Monitoring Locations

Monitoring Location Type	Monitoring Location Name	Monitoring Location Description [1]
Oceanside Water Pollution Control Plant Influent (dry weather)	INF-001A	During dry weather, any point in the plant headworks where all waste tributary to the plant is present and preceding any phase of treatment at the plant, exclusive of any return flows or process side streams.

Monitoring Location Type	Monitoring Location Name	Monitoring Location Description [1]
Oceanside Water Pollution Control Plant Influent (wet weather)	INF-001B	During wet weather, any point in the plant headworks where all waste tributary to the plant is present and preceding any phase of treatment at the plant, exclusive of any return flows or process side streams.
Oceanside Water Pollution Control Plant Effluent (dry weather)	EFF-001A	During dry weather, any point at the plant following all phases of treatment, prior to contact with Westside Recycled Water Project concentrate and the receiving water at Discharge Point No. 001.
Oceanside Water Pollution Control Plant Effluent (wet weather)	EFF-001B	During wet weather, any point at the plant following all phases of treatment, prior to contact with Westside Transport/Storage Structure effluent, Westside Recycled Water Project concentrate, and the receiving water at Discharge Point No. 001.
Oceanside Water Pollution Control Plant Effluent and Westside Recycled Water Project Concentrate (dry weather)	EFF-001C	During dry weather, any point at which all plant effluent and Westside Recycled Water Project concentrate tributary to Discharge Point No. 001 is present and after all phases of treatment. The Discharger may combine 24-hour composite samples from Monitoring Locations EFF-001A and EFF-001R to create a volumetrically flow-weighted representative sample for Monitoring Location EFF-001C.
Westside Transport/Storage Structure Effluent (wet weather) (identified in the previous order as "decant")	EFF-001D	During wet weather, any point following the Westside Pump Station wet weather pumps, prior to contact with treated plant effluent, Westside Recycled Water Project concentrate, and the receiving water at Discharge Point No. 001.
Westside Recycled Water Project Reverse Osmosis Concentrate	EFF-001R	Any point at the Westside Recycled Water Project following all phases of treatment, prior to contact with plant effluent, Westside Transport/Storage Structure effluent, and the receiving water at Discharge Point No. 001.
Combined Sewer Discharge Effluent	EFF-CSD	A monitoring location representative of combined sewer discharges from the Westside Transport/Storage Structure.
Shoreline Receiving Water	SRF-15	Nearshore receiving water along Baker Beach, in the surf at the terminus of Lobos Creek.
Shoreline Receiving Water	SRF-15 east	Nearshore receiving water along Baker Beach, in the surf east of Monitoring Location SRF-15.
Shoreline Receiving Water	SRF-16	Nearshore receiving water along Baker Beach, in the surf opposite the Sea Cliff No. 2 Pump Station.
Shoreline Receiving Water	SRF-17	Nearshore receiving water along China Beach, in the surf opposite the Sea Cliff No. 1 Pump Station.
Shoreline Receiving Water	SRF-18	Nearshore receiving water along Ocean Beach, in the surf at the foot of Balboa Street.
Shoreline Receiving Water	SRF-19	Nearshore receiving water along Ocean Beach, in the surf at the foot of Lincoln Way, opposite the Lincoln Combined Sewer Discharge Structure.
Shoreline Receiving Water	SRF-20	Nearshore receiving water along Ocean Beach, in the surf at the foot of Pacheco Street.
Shoreline Receiving Water	SRF-21	Nearshore receiving water along Ocean Beach, in the surf at the foot of Vicente Street, opposite the Vicente Combined Sewer Discharge Structure.
Shoreline Receiving Water	SRF-21.1	Nearshore receiving water along Ocean Beach, in the surf at the foot of Sloat Boulevard.

Monitoring Location Type	Monitoring Location Name	Monitoring Location Description [1]
Shoreline Receiving Water	SRF-22	Nearshore receiving water along Ocean Beach, in the surf at Fort Funston, opposite the Lake Merced Combined Sewer Discharge Structure.
Offshore Receiving Water	Station 1	Offshore monitoring program station location. *Longitude -122.57533°, Latitude 37.70333°*
Offshore Receiving Water	Station 2	Offshore monitoring program station location. *Longitude -122.57500°, Latitude 37.71050°*
Offshore Receiving Water	Station 4	Offshore monitoring program station location. *Longitude -122.59500°, Latitude 37.71167°*
Offshore Receiving Water	Station 6	Offshore monitoring program station location. *Longitude -122.53750°, Latitude 37.66667°*
Offshore Receiving Water	Station 25	Offshore monitoring program station location. *Longitude -122.57500°, Latitude 37.70383°*
Offshore Receiving Water	Station 28	Offshore monitoring program station location. *Longitude -122.57467°, Latitude 37.69833°*
Offshore Receiving Water	Station 31	Offshore monitoring program station location. *Longitude -122.56717°, Latitude 37.72467°*
Offshore Receiving Water	Station 32 (formerly R1)	Offshore monitoring program station location. *Longitude -122.64128°, Latitude 37.86799°*
Offshore Receiving Water	Station 33 (formerly R2)	Offshore monitoring program station location. *Longitude -122.60024°, Latitude 37.85171°*
Offshore Receiving Water	Station 34 (formerly R3)	Offshore monitoring program station location. *Longitude -122.64744°, Latitude 37.85129°*
Offshore Receiving Water	Station 35 (formerly R4)	Offshore monitoring program station location. *Longitude -122.67920°, Latitude 37.84832°*
Offshore Receiving Water	Station 36 (formerly R5)	Offshore monitoring program station location. *Longitude -122.62008°, Latitude 37.83773°*
Offshore Receiving Water	Station 37 (formerly R6)	Offshore monitoring program station location. *Longitude -122.59485°, Latitude 37.83656°*
Offshore Receiving Water	Station 38 (formerly R7)	Offshore monitoring program station location. *Longitude -122.65501°, Latitude 37.82802°*
Offshore Receiving Water	Station 39 (formerly R8)	Offshore monitoring program station location. *Longitude -122.69042°, Latitude 37.82200°*
Offshore Receiving Water	Station 40 (formerly R9)	Offshore monitoring program station location. *Longitude -122.62493°, Latitude 37.80880°*
Offshore Receiving Water	Station 43 (formerly R12)	Offshore monitoring program station location. *Longitude -122.61608°, Latitude 37.78552°*
Offshore Receiving Water	Station 45 (formerly R14)	Offshore monitoring program station location. *Longitude -122.64399°, Latitude 37.77483°*
Offshore Receiving Water	Station 47 (formerly R16)	Offshore monitoring program station location. *Longitude -122.61792°, Latitude 37.76106°*
Offshore Receiving Water	Station 48 (formerly R17)	Offshore monitoring program station location. *Longitude -122.64888°, Latitude 37.75941°*
Offshore Receiving Water	Station 50 (formerly R19)	Offshore monitoring program station location. *Longitude -122.66556°, Latitude 37.75000°*

Monitoring Location Type	Monitoring Location Name	Monitoring Location Description [1]
Offshore Receiving Water	Station 51 (formerly R20)	Offshore monitoring program station location. *Longitude -122.59875°, Latitude 37.74622°*
Offshore Receiving Water	Station 52 (formerly R21)	Offshore monitoring program station location. *Longitude -122.51989°, Latitude 37.72863°*
Offshore Receiving Water	Station 53 (formerly R22)	Offshore monitoring program station location. *Longitude -122.64514°, Latitude 37.71787°*
Offshore Receiving Water	Station 54 (formerly R23)	Offshore monitoring program station location. *Longitude -122.54650°, Latitude 37.71651°*
Offshore Receiving Water	Station 55 (formerly R24)	Offshore monitoring program station location. *Longitude -122.57086°, Latitude 37.71569°*
Offshore Receiving Water	Station 56 (formerly R25)	Offshore monitoring program station location. *Longitude -122.60786°, Latitude 37.71146°*
Offshore Receiving Water	Station 57 (formerly R26)	Offshore monitoring program station location. *Longitude -122.51912°, Latitude 37.70940°*
Offshore Receiving Water	Station 58 (formerly R27)	Offshore monitoring program station location. *Longitude -122.58201°, Latitude 37.70430°*
Offshore Receiving Water	Station 59 (formerly R28)	Offshore monitoring program station location. *Longitude -122.53662°, Latitude 37.69324°*
Offshore Receiving Water	Station 60 (formerly R29)	Offshore monitoring program station location. *Longitude -122.60180°, Latitude 37.68914°*
Offshore Receiving Water	Station 61 (formerly R30)	Offshore monitoring program station location. *Longitude -122.55807°, Latitude 37.68204°*
Offshore Receiving Water	Station 62 (formerly R31)	Offshore monitoring program station location. *Longitude -122.62865°, Latitude 37.68227°*
Offshore Receiving Water	Station 63 (formerly R32)	Offshore monitoring program station location. *Longitude -122.56150°, Latitude 37.65879°*
Offshore Receiving Water	Station 64 (formerly R33)	Offshore monitoring program station location. *Longitude -122.53465°, Latitude 37.65406°*
Offshore Receiving Water	Station 65 (formerly R34)	Offshore monitoring program station location. *Longitude -122.54111°, Latitude 37.63414°*
Offshore Receiving Water	Station 66 (formerly R35)	Offshore monitoring program station location. *Longitude -122.61113°, Latitude 37.62840°*
Offshore Receiving Water	Station 67 (formerly R36)	Offshore monitoring program station location. *Longitude -122.56486°, Latitude 37.62633°*
Offshore Receiving Water	Station 68 (formerly R37)	Offshore monitoring program station location. *Longitude -122.61549°, Latitude 37.61694°*
Offshore Receiving Water	Station 69 (formerly R38)	Offshore monitoring program station location. *Longitude -122.59134°, Latitude 37.61449°*
Offshore Receiving Water	Station 70 (formerly R39)	Offshore monitoring program station location. *Longitude -122.53371°, Latitude 37.60893°*
Offshore Receiving Water	Station 71 (formerly R40)	Offshore monitoring program station location. *Longitude -122.55084°, Latitude 37.60465°*
Offshore Receiving Water	Station 72 (formerly R41)	Offshore monitoring program station location. *Longitude -122.65550°, Latitude 37.80367°*
Offshore Receiving Water	Station 80 (formerly R49)	Offshore monitoring program station location. *Longitude -122.51500°, Latitude 37.71500°*

Monitoring Location Type	Monitoring Location Name	Monitoring Location Description [1]
Biosolids	BIO-001	Biosolids (treated sludge)

Footnote:

[1] Latitude and longitude information is approximate.

III. INFLUENT MONITORING REQUIREMENTS

The Discharger shall monitor Oceanside Water Pollution Control Plant influent at Monitoring Location INF-001A during dry weather and Monitoring Location INF-001B during wet weather as follows:

Table E-2. Plant Influent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency [2]
Flow [1]	MG/MGD	Continuous	Continuous/D
Carbonaceous Biochemical Oxygen Demand (5-day @ 20°C)($CBOD_5$) [3]	mg/L	C-24	1/Week
Total Suspended Solids (TSS)	mg/L	C-24	5/Week

Abbreviations:

MG = million gallons
MGD = million gallons per day
mg/L = milligrams per liter

Sample Types and Frequencies:

Continuous = measured continuously
Continuous/D = measured continuously, and recorded and reported daily
C-24 = 24-hour composite
1/Week = once per week
5/Week = five times per week

Footnotes:

[1] The following information shall be reported in monthly self-monitoring reports:

- Daily average flow (MGD)
- Total monthly flow volume (MG)

[2] The minimum sampling frequency is the total number of influent samples to be collected during the specified sampling period, including samples collected during dry and wet weather at Monitoring Locations INF-001A and INF-001B.

[3] The Discharger may monitor Chemical Oxygen Demand at Monitoring Location INF-001B in lieu of $CBOD_5$ during wet weather.

IV. EFFLUENT MONITORING REQUIREMENTS

A. Oceanside Water Pollution Control Plant

1. **Dry and Wet Weather.** The Discharger shall monitor plant effluent at Monitoring Location EFF-001A during dry weather and at Monitoring Location EFF-001B during wet weather as follows:

Table E-3. Plant Effluent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency [3]
Flow [1]	MG/MGD	Continuous	Continuous/D
$CBOD_5$ [2]	mg/L	C-24	1/Week
TSS	mg/L	C-24	5/Week
pH	standard units	Continuous or Grab	1/Week

Abbreviations:

MG = million gallons
MGD = million gallons per day
mg/L = milligrams per liter

Sample Types and Frequencies:

Continuous = measured continuously
Continuous/D = measured continuously, and recorded and reported daily
C-24 = 24-hour composite
Grab = grab sample
1/Week = once per week
5/Week = five times per week

Footnotes:

[1] The following information shall be reported in monthly self-monitoring reports:

- Daily average flow (MGD)
- Total monthly flow volume (MG)

[2] The Discharger may monitor Chemical Oxygen Demand at Monitoring Location EFF-001B in lieu of $CBOD_5$ during wet weather.

[3] The minimum sampling frequency is the total number of effluent samples to be collected during the specified sampling period, including samples collected during dry and wet weather at Monitoring Locations EFF-001A and EFF-001B.

2. **Dry Weather.** During dry weather, the Discharger shall monitor plant effluent at Monitoring Location EFF-001A as follows:

Table E-4. Dry Weather Plant Effluent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency
Oil and Grease	mg/L	Grab	1/Quarter
Ammonia, total	mg/L as N	C-24	1/Quarter
Arsenic	µg/L	C-24	1/Quarter
Cadmium	µg/L	C-24	1/Quarter
Copper	µg/L	C-24	1/Quarter
Lead	µg/L	C-24	1/Quarter
Nickel	µg/L	C-24	1/Quarter
Selenium	µg/L	C-24	1/Quarter
Silver	µg/L	C-24	1/Quarter
Zinc	µg/L	C-24	1/Quarter
Remaining Ocean Plan Table 1 Pollutants [1]	µg/L	C-24 [2]	1/Year

Abbreviations:

mg/L = milligrams per liter
mg/L as N = milligrams per liter as nitrogen
µg/L = micrograms per liter

Sample Types and Frequencies:

C-24 = 24-hour composite
Grab = grab sample
1/Quarter = once per quarter
1/Year = once per year

Footnotes:

[1] The Discharger shall monitor for the pollutants listed in Ocean Plan Table 1, except chlorine, tributyltin, radioactivity, acute toxicity, and chronic toxicity. The Discharger may monitor for total chromium in lieu of hexavalent chromium.

[2] For mercury and other parameters with analytical methods that require grab sampling, the Discharger may collect a grab sample instead of a 24-hour composite sample.

3. **Wet Weather.** During wet weather, the Discharger shall monitor plant effluent at Monitoring Location EFF-001B as follows:

Table E-5. Wet Weather Plant Effluent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency
Duration of Blending [1]	minutes	Calculated	Continuous/D
Volume of Blended Wastewater Discharged [1]	MG	Calculated	Continuous/D
Ocean Plan Table 1 Pollutants [2]	µg/L	C-24 [3]	1/Year

Abbreviations:

MG = million gallons
µg/L = micrograms per liter

Sample Types and Frequencies:

Continuous/D = measured continuously, and recorded and reported daily
C-24 = 24-hour composite
1/Year = once per year

Footnotes:

[1] Blended wastewater is biologically-treated wastewater blended with wastewater diverted around biological treatment units at the Oceanside Water Pollution Control Plant. For each day on which blending occurs, the Discharger shall report the duration of blending and the volume of primary-only-treated wastewater blended.

[2] The Discharger shall monitor for the pollutants listed in Ocean Plan Table 1, except chlorine, tributyltin, radioactivity, acute toxicity, and chronic toxicity. The Discharger may monitor for total chromium in lieu of hexavalent chromium.

[3] For mercury and other parameters with analytical methods that require grab sampling, the Discharger may collect a grab sample instead of a 24-hour composite sample.

B. Combined Sewer System

1. **Westside Transport/Storage Structure Effluent.** During wet weather, the Discharger shall monitor Westside Transport/Storage Structure effluent at Monitoring Location EFF-001D as shown in Table E-6.

Table E-6. Westside Transport/Storage Structure Effluent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow Volume [1]	MG	Continuous	Continuous/D
TSS	mg/L	C-X [3]	3/Year
Ammonia, total	mg/L as N	C-X [3]	3/Year
Arsenic	µg/L	C-X [3]	3/Year

Parameter	Units	Sample Type	Minimum Sampling Frequency
Cadmium	µg/L	C-X [3]	3/Year
Copper	µg/L	C-X [3]	3/Year
Lead	µg/L	C-X [3]	3/Year
Nickel	µg/L	C-X [3]	3/Year
Selenium	µg/L	C-X [3]	3/Year
Silver	µg/L	C-X [3]	3/Year
Zinc	µg/L	C-X [3]	3/Year
Remaining Ocean Plan Table 1 Pollutants [2]	µg/L	C-X [3,4]	1/Year

Abbreviations:

MG = million gallons
mg/L = milligrams per liter
mg/L as N = milligrams per liter as nitrogen
µg/L = micrograms per liter

Sample Types and Frequencies:

Continuous = measured continuously
Continuous/D = measured continuously, and recorded and reported daily
C-X = composite sample comprised of individual grab samples collected at equal intervals of no more than one hour at least until a sufficient sample volume for the required analyses is obtained.
1/Year = once per year
3/Year = three times per year

Footnotes:

[1] The following information shall be reported in monthly self-monitoring reports:
- Total daily flow volume from the Westside Transport/Storage Structure to Discharge Point No. 001
- Total monthly flow volume from the Westside Transport/Storage Structure to Discharge Point No. 001

[2] The Discharger shall monitor for the pollutants listed in Ocean Plan Table 1, except chlorine, tributyltin, radioactivity, acute toxicity, chronic toxicity, and volatile organic compounds. The Discharger may monitor for total chromium in lieu of hexavalent chromium.

[3] If the discharge lasts less than 24 hours, the Discharger shall sample at equal intervals for as long as possible and record the duration. The Discharger shall begin collecting aliquots or grab samples within two hours of commencing discharge from the Westside Transport/Storage Structure directly to Discharge Point No. 001.

[4] For mercury and other parameters with analytical methods that require grab sampling, the Discharger may collect a grab sample instead of a 24-hour composite sample.

2. Combined Sewer Discharges

a. During combined sewer discharge events, the Discharger shall monitor combined sewer discharge effluent at Monitoring Location EFF-CSD as follows:

Table E-7. Combined Sewer Discharge Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency
TSS	mg/L	C-X [2]	1/Event
Ammonia, total	mg/L as N	C-X [2]	1/Event
Arsenic	µg/L	C-X [2]	1/Event
Cadmium	µg/L	C-X [2]	1/Event
Copper	µg/L	C-X [2]	1/Event
Lead	µg/L	C-X [2]	1/Event
Nickel	µg/L	C-X [2]	1/Event

Parameter	Units	Sample Type	Minimum Sampling Frequency
Selenium	µg/L	C-X [2]	1/Event
Silver	µg/L	C-X [2]	1/Event
Zinc	µg/L	C-X [2]	1/Event
Remaining Ocean Plan Table 1 Pollutants [1]	µg/L	C-X [2,3]	1/Year

Abbreviations:

mg/L = milligrams per liter
mg/L as N = milligrams per liter as nitrogen
µg/L = micrograms per liter

Sample Types and Frequencies:

C-X = composite sample comprised of individual grab samples collected at equal intervals of no more than one hour at least until a sufficient sample volume for the required analysis is obtained.
Grab = grab sample
1/Event = once per combined sewer discharge event
1/Year = once per year

Footnotes:

[1] The Discharger shall monitor for the pollutants listed in Ocean Plan Table 1, except chlorine, tributyltin, radioactivity, acute toxicity, chronic toxicity, and volatile organic compounds. The Discharger may monitor for total chromium in lieu of hexavalent chromium.

[2] If the discharge lasts less than 24 hours, the Discharger shall sample for as long as possible at equal intervals and record the duration. If the discharge lasts less than one hour, the Discharger shall collect at least one grab sample.

[3] For mercury and other parameters with analytical methods that require grab sampling, the Discharger may collect a grab sample instead of a composite sample.

b. The Discharger shall record and report in each self-monitoring report the following information for each discharge at Discharge Point Nos. CSD-001, CSD-002, CSD-003, CSD-004, CSD-005, CSD-006, and CSD-007:

i. Date and time the combined sewer discharge started;

ii. Event duration (in minutes) and volume (in million gallons);

iii. Rainfall intensity and amount (in inches per day and peak hourly rainfall intensity per day) at representative locations where rainfall was measured;

iv. Information supporting discharge volume estimates (if estimated); and

v. Documentation of compliance or noncompliance with each wet weather operational requirement in Provision VI.C.5.c of the Order.

C. Westside Recycled Water Project

When the Westside Recycled Water Project is operating, the Discharger shall monitor reverse osmosis concentrate at Monitoring Location EFF-001R as follows:

Table E-8. Westside Recycled Water Project Concentrate Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow [1]	MG/MGD	Continuous	Continuous/D

Parameter	Units	Sample Type	Minimum Sampling Frequency
TSS	mg/L	C-24	1/Month
pH	standard units	Continuous or Grab	1/Month
Settleable Solids	mL/L	Grab or C-24	1/Month
Turbidity	NTU	C-24	1/Month
Oil and Grease	mg/L	Grab	1/Quarter
Ocean Plan Table 1 Pollutants [2]	µg/L	C-24 [3]	1/Year

Abbreviations:

MG = million gallons
MGD = million gallons per day
mg/L = milligrams per liter
mL/L = milliliters per liter
µg/L = micrograms per liter
NTU = nephelometric turbidity units

Sample Types and Frequencies:

Continuous = measured continuously
Continuous/D = measured continuously, and recorded and reported daily
C-24 = 24-hour composite
Grab = grab sample
1/Month = once per month
1/Quarter = once per quarter
1/Year = once per year

Footnotes:

[1] The following information shall be reported in monthly self-monitoring reports:

- Daily average flow (MGD)
- Total monthly flow volume (MG)

[2] The Discharger shall monitor for the pollutants listed in Ocean Plan Table 1, except chlorine, tributyltin, radioactivity, acute toxicity, and chronic toxicity. The Discharger may monitor for total chromium in lieu of hexavalent chromium.

[3] For mercury and other parameters with analytical methods that require grab sampling, the Discharger may collect a grab sample instead of a 24-hour composite sample.

D. Discharge Point No. 001

During dry weather, the Discharger shall monitor discharges at Discharge Point No. 001 at Monitoring Location EFF-001C as specified in Table E-9, below. If during the year the discharge at Discharge Point No. 001 is ever entirely reverse osmosis concentrate, the Discharger shall collect at least one sample during that time, if feasible. Otherwise, the Discharger shall collect samples when the Recycled Water Project is operating, if possible.

Table E-9. Dry Weather Discharge Point No. 001 Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency
Chronic Toxicity [1]	Pass or Fail and Percent Effect	C-24	1/Quarter

Sample Type and Frequency:

C-24 = 24-hour composite
1/Quarter = once per quarter

Footnote:

[1] Chronic toxicity test samples shall be collected coincident with routine composite effluent samples and analyzed in accordance with MRP section V.

V. CHRONIC TOXICITY MONITORING REQUIREMENTS

A. Methodology

1. The Discharger shall conduct static non-renewal chronic toxicity tests with the purple sea urchin (*Strongylocentrotus purpuratus*) or the sand dollar (*Dendraster excentricus*) with the embryo-larval development test method. Bioassays shall be conducted in compliance with the most recently promulgated test methods, currently *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms* (EPA 600/R-95/136, 1995). If these protocols prove unworkable, the Regional Water Board and U.S. EPA may grant exceptions in writing upon the Discharger's request with justification.

2. The in-stream waste concentration (IWC) shall depend on the amount of recycled water being produced. When the Westside Recycled Water Project produces less than 1.0 MGD of recycled water for distribution, the IWC shall be 0.67 percent effluent. When the Westside Recycled Water Project produces at least 1.0 MGD of recycled water for distribution, the IWC shall be 0.37 percent effluent. Recycled water production for this purpose shall be determined based on the volume of recycled water produced during the 24-hour composite sampling period for the chronic toxicity test.

3. If an effluent toxicity test does not meet all test acceptability criteria in the test methods manual, the Discharger shall resample and retest within 14 days.

4. Dilution and control water, including brine controls, shall be 1-µm-filtered uncontaminated natural seawater, hypersaline brine prepared using uncontaminated natural seawater, or laboratory water prepared and used as specified in the test methods manual. If dilution water and control water are different from test organism culture water, the Discharger shall test a second control using culture water.

5. The Discharger shall conduct concurrent reference toxicant tests at least quarterly. The Discharger shall review and report all reference toxicant test results using the EC_{25} and EC_{50}.

B. Compliance Determination

Samples collected during routine and accelerated monitoring shall be used to evaluate compliance. Compliance with the chronic toxicity effluent limitation shall be evaluated using the TST statistical approach at the discharge IWC. The Discharger shall determine "Pass" or "Fail" and "percent effect" from a toxicity test at the discharge IWC using the TST statistical approach in *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document* (EPA 833-R-10-003, 2010), Appendix A, Figure A-1 and Table A-1. The TST null hypothesis shall be the following:

$$\text{mean discharge IWC response} \leq 0.75 \times \text{mean control response}$$

The Discharger shall report a test that rejects this null hypothesis as "Pass" and a test that does not reject this null hypothesis as "Fail." The relative "percent effect" at the discharge IWC shall be calculated and reported as:

([mean control response – mean discharge response] / mean control response) x 100%

C. Accelerated Monitoring

If a chronic bioassay test indicates a violation of the chronic toxicity effluent limitation, the Discharger shall retest within five days of receiving test results, or within seven days if the sample is contracted out to a commercial laboratory. Accelerated monitoring shall consist of four toxicity tests conducted at approximately two-week intervals. The Discharger shall return to routine monitoring if all four monitoring test results are "Pass."

If any accelerated monitoring test violates the chronic toxicity effluent limitation, the Discharger shall immediately initiate toxicity reduction evaluation (TRE) procedures in accordance with MRP section V.E. Accelerated monitoring is not required once the Discharger has initiated a TRE; however, the Discharger shall continue to conduct routine effluent monitoring for compliance determination purposes during the TRE.

D. Reporting Requirements

For each chronic toxicity test, whether identified as valid or not, the Discharger shall report the following, at a minimum, in monthly self-monitoring reports:

1. Sample date;

2. Test initiation date;

3. Test species;

4. TST statistical results (i.e., "Pass" or "Fail," and "percent effect" at the IWC);

5. Other biological and statistical endpoint values as appropriate (e.g., number of young, growth rate, NOEC, EC_{25});

6. Summary of water quality measurements for each toxicity test (e.g., pH, dissolved oxygen, temperature, conductivity, hardness, salinity, and ammonia);

7. Statistical program output results for each toxicity test, including tabular data and graphical plots;

8. Tabular data and graphical plots showing the laboratory's performance for (1) the reference toxicant for the previous 20 tests; and (2) the control mean, control standard deviation, and control coefficient of variation for the previous 12 months; and

9. Status of any ongoing TRE work, including completed and planned investigative activities.

E. Toxicity Reduction Evaluation (TRE)

1. Generic TRE Work Plan. The Discharger shall prepare and submit an initial investigation TRE work plan within 90 days of the effective date of this Order. The Discharger shall prepare the work plan based on *Toxicity Reduction Evaluation Guidance for Municipal*

Wastewater Treatment Plants (EPA/833/B-99/002, 1999), or the most current version. The work plan shall describe the steps the Discharger intends to follow if toxicity is detected. At a minimum, the work plan shall include a description of the following:

a. Investigation and evaluation techniques that will be used to identify potential causes and sources of toxicity, effluent variability, and treatment system efficiency;

b. Methods of maximizing in-house treatment efficiency and good housekeeping practices, and a list of all chemicals used in the operation of the Facility; and

c. Staff responsible for conducting TIEs (e.g., in-house expert, outside contractor).

2. **Specific TRE Work Plan.** If an accelerated monitoring test violates the chronic toxicity effluent limitation, the Discharger shall immediately initiate a TRE and submit a specific TRE work plan within 15 days. The specific work plan shall be the generic work plan revised as appropriate for this toxicity event. The Discharger shall implement the TRE in accordance with the work plan, incorporating any comments received from the Regional Water Board Executive Officer or U.S. EPA. The specific TRE work plan shall include the following:

   a. Actions to investigate, identify, and correct the causes of toxicity;

   b. Actions to mitigate the effects of the discharge and prevent the recurrence of toxicity; and

   c. Schedule for these actions, progress reports, and the final report.

3. **Toxicity Identification Evaluation (TIE).** The Discharger may initiate a TIE as part of a TRE to identify the cause of toxicity. The Discharger shall employ all reasonable efforts using currently available TIE methodologies (*Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluents, Phase I* [EPA 600/6-91/005F, 1992]; *Methods for Aquatic Toxicity Identification Evaluations, Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity* [EPA 600/R-92/080, 1993]; *Methods for Aquatic Toxicity Identification Evaluations, Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity* [EPA 600/R-92/081, 1993]; and *Marine Toxicity Identification Evaluation [TIE]: Phase I Guidance Document* [EPA 600/R-96-054, 1996]).

F. Species Screening

1. The Discharger shall conduct a chronic toxicity screening test as described below (or as described in applicable State Water Board plan provisions that become effective after adoption of this Order) following any significant change in the nature of the effluent, except a change that reduces pollutant concentrations or a change resulting from operation of the Westside Recycled Water Project. If there is no significant change in the nature of the effluent, the Discharger shall conduct a screening test prior to submitting an application for permit reissuance.

2. Prior to undertaking a screening test, the Discharger shall submit a screening test proposal. The proposal shall address the elements below. If within 30 days the Regional Water Board

Executive Officer and U.S. EPA do not comment on the proposal, the Discharger shall commence the screening test.

3. The screening test shall use the protocols described in *Short-term Methods for Estimating the Chronic Toxicity of Effluent and Receiving Waters to West Coast Marine and Estuarine Organisms* (EPA 600/R-95/136, 1995) and test species specified in the table below:

Table E-10. Critical Life Stage Toxicity Tests

Species	Scientific Name	Effect	Test Duration
Giant kelp	*Macrocystis pyrifera*	Percent germination; germ tube length	48 hours
Abalone	*Haliotis rufescens*	Abnormal shell development	48 hours
Oyster Mussel	*Crassostrea gigas* *Mytilus edulis*	Abnormal shell development; percent survival	48 hours
Echinoderms - Urchins Sand dollar	*Strongylocentrotus purpuratus, Strongylocentrotus franciscanus, or Dendraster excentricus*	Percent fertilization or larval development	1 hour (fertilization) or 72 hours (development)
Shrimp	*Holmesimysis costata*	Percent survival; growth	7 days
Topsmelt	*Atherinops affinis*	Percent survival; growth	7 days

4. The Discharger shall conduct screening tests in two stages:

a. Stage 1 shall consist of a minimum of one battery of at least four tests conducted concurrently. Test species shall include at least one plant, one invertebrate, and one fish.

b. Stage 2 shall consist of a minimum of two test batteries initiated in different calendar months using the three most sensitive species determined based on the stage 1 test results.

5. The Discharger shall use appropriate controls and conduct concurrent reference toxicant tests.

6. The Discharger shall conduct screening tests at 75, 20, 0.67, 0.37, and 0.17 percent effluent.

VI. RECEIVING WATER MONITORING REQUIREMENTS

A. Shoreline Monitoring

1. The Discharger shall monitor shoreline receiving waters at Monitoring Locations SRF-15 east, SRF-15, SRF-17, SRF-18, SRF-19, and SRF-21.1 as follows:

Table E-11. Ambient Shoreline Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency
Enterococcus [1]	MPN/100 mL [2]	Grab	1/Week
Fecal coliform [3]	MPN/100 mL [2]	Grab	1/Week
Total coliform	MPN/100 mL [2]	Grab	1/Week

Abbreviation:

MPN/100 mL = most probable number per 100 milliliters

Sample Type and Frequency:

Grab = grab sample
1/Week = once per week

Footnotes:

[1] The Discharger shall monitor for enterococcus using U.S. EPA-approved methods, such as the IDEXX Enterolert method. When replicate analyses are made, the reported result shall be the geometric mean of the replicate results.

[2] Results may be reported as Colony Forming Units (CFU)/100 mL if the laboratory method used provides results in CFU/100 mL.

[3] The Discharger shall begin monitoring fecal coliform on October 1, 2020.

2. Following any combined sewer discharge at Discharge Point Nos. CSD-001, CSD-002, CSD-003, CSD-005, CSD-006, or CSD-007, the Discharger shall monitor shoreline receiving waters as indicated in the table below. Monitoring shall be conducted at each specified location for up to seven days or until the single-sample bacteriological standards of Cal. Code of Regs. tit. 17, section 7958(a)(1), are met (i.e., the enterococcus density is less than 104 most probable number (MPN)/100 mL, the fecal coliform density is less than 400 MPN/100 mL, and the total coliform density is less than 10,000 MPN/100 mL).

Table E-12. Post-CSD Event Shoreline Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency
Enterococcus [1]	MPN/100 mL [2]	Grab	1/Day [3]
Fecal coliform [4]	MPN/100 mL [2]	Grab	1/Day [3]
Total coliform	MPN/100 mL [2]	Grab	1/Day [3]
Standard observations [5]	---	---	1/Day [3]

Abbreviation:

MPN/100 mL = most probable number per 100 milliliters

Sample Type and Frequency:

Grab = grab sample
1/Day = once per day

Footnotes:

[1] The Discharger shall monitor for enterococcus using U.S. EPA-approved methods, such as the IDEXX Enterolert method. When replicate analyses are made, the reported result shall be the geometric mean of the replicate results.

[2] Results may be reported as Colony Forming Units (CFU)/100 mL if the laboratory method used provides results in CFU/100 mL.

[3] Sampling is only required at the monitoring locations indicated below when there is a combined sewer discharge at the discharge points indicated below:

Discharge Point	Monitoring Locations
CSD-001	SRF-22
CSD-002	SRF-20, SRF-21, and SRF-21.1
CSD-003	SRF-18, SRF-19, and SRF-20
CSD-005	SRF-17

CSD-006	SRF-15 east, SRF-15, and SRF-16
CSD-007	SRF-15 east, SRF-15, and SRF-16

[4] The Discharger shall begin monitoring fecal coliform on October 1, 2020.

[5] Standard observations are defined in Attachment G section III.B.3 and shall include any apparent fish kills. The estimated size of the affected area is not required.

B. Offshore Monitoring

The Discharger shall continue the Southwest Ocean Outfall Regional Monitoring Program, monitoring the area outside San Francisco Bay between Rocky Point in Marin County and Point San Pedro in San Mateo County, to identify any environmental effects of the discharge on receiving waters, sediment, or aquatic life.

1. **Sampling Frequency.** The Discharger shall sample annually in the fall when sediments are least disturbed and benthic infauna are most abundant.

2. **Sediment Chemistry Sampling**. The Discharger shall collect benthic samples from the seven historical monitoring locations (Stations 1, 2, 4, 6, 25, 28, and 31) to maintain time series data, and a minimum of 23 out of the 37 other monitoring locations (Stations 32 through 80). Samples shall be collected using a 0.1-square meter Smith-McIntyre grab sampler. The Discharger shall collect two grab samples at each station and composite the top 5 centimeters of sediment from each grab prior to analysis. The Discharger shall analyze the sediment samples for the following:

   - Total volatile solids
   - Total organic carbon
   - Kjeldahl nitrogen
   - Grain size
   - Inorganic toxic pollutants: aluminum, arsenic, cadmium, chromium, chromium (VI), copper, iron, lead, manganese, mercury, nickel, selenium, silver, and zinc. The Discharger may elect to report total chromium in lieu of chromium (VI).
   - DDT, PCBs, and PAHs

3. **Infaunal Sampling.** The Discharger shall analyze one benthic grab sample collected from each of the locations identified in the paragraph above for infaunal organisms. This sample shall be passed through 1.0- and 0.5-millimeter sieves. The Discharger shall relax organisms retained on each sieve and preserve them for later enumeration and taxonomic determination to the lowest taxon.

4. **Bioaccumulation Monitoring.** The Discharger shall conduct bioaccumulation monitoring to assess whether the concentrations of priority pollutants in marine life bioaccumulate to levels harmful to human health or the marine community. Tissue samples to assess bioaccumulation shall be collected at two locations: one at Station 1, 2, 25, or 28, and one at a reference location outside the influence of the discharge. At each location, three composite samples shall be collected of one macroinvertebrate species. Each composite sample shall consist of ten or more organisms of each species, with the preferred species being Dungeness crab (*Metacarcinus magister*). Muscle and hepatopancreas tissues shall be analyzed for inorganic

pollutants (i.e., arsenic, cadmium, chromium, copper, lead, mercury, selenium, silver, and zinc), DDT, PCBs, and PAHs.

5. **Reporting.** All offshore monitoring data shall be reported to the Regional Water Board and U.S. EPA in an Annual Report submitted by August 30 of the year following sampling. The report shall include raw data tables and summaries for each monitoring component. In addition to the annual reporting requirements, a comprehensive cumulative summary report shall be submitted with the application for permit reissuance.

VII. PRETREATMENT AND BIOSOLIDS MONITORING REQUIREMENTS

The Discharger shall comply with the following pretreatment monitoring requirements for influent at Monitoring Location INF-001A, effluent at Monitoring Location EFF-001A, and biosolids at Monitoring Location BIO-001. The Discharger shall report summaries of analytical results in pretreatment reports in accordance with Attachment H. If instructed to do so, the Discharger shall report biosolids analytical results with its electronic self-monitoring reports by manual entry, by EDF/CDF, or as an attached file.

Table E-13. Pretreatment and Biosolids Monitoring

Constituents	Influent INF-001A	Effluent EFF-001A [1]	Biosolids BIO-001	Sample Type	
				Influent and Effluent	Biosolids [7a]
VOC [2]	2/Year	2/Year	2/Year	Grab	Grab
BNA [3]	2/Year	2/Year	2/Year	Grab	Grab
Metals and Other Elements [4]	1/Month	1/Month	2/Year	C-24 [7b]	Grab
Hexavalent Chromium [5]	1/Month	1/Month	2/Year	Grab	Grab
Mercury	1/Month	1/Month [6]	2/Year	Grab	Grab
Cyanide	1/Month	1/Month	---	Grab	---
Molybdenum	---	---	2/Year	---	Grab
Organic Nitrogen	---	---	2/Year	---	Grab
Ammonia Nitrogen	---	---	2/Year	---	Grab
Total Solids	---	---	2/Year	---	Grab

Sample Types and Frequencies:

C-24 = 24-hour composite
Grab = grab sample
1/Month = once per month
2/Year = twice per year

Footnotes:

[1] Effluent monitoring conducted in accordance with Table E-4 may be used to satisfy these pretreatment monitoring requirements.

[2] VOC: volatile organic compounds.

[3] BNA: base/neutrals and acid extractable organic compounds.

[4] The metals and other elements are arsenic, cadmium, copper, lead, nickel, selenium, silver, and zinc.

[5] The Discharger may elect to monitor total chromium instead of hexavalent chromium and may elect to collect 24-hour composite samples instead of grab samples for total chromium.

[6] The Discharger shall use ultra-clean sampling (U.S. EPA Method 1669) and ultra-clean analytical methods (U.S. EPA Method 1631) for mercury monitoring, except when concentrations are expected to exceed 10 µg/L, in which case use of ultra-clean sampling and analysis methods is optional.

[7] Sample types:

a. The biosolids sample shall be a composite of the biosolids to be disposed. Biosolids sample collection and monitoring shall comply with the requirements in Attachment H, Appendix H-4. The Discharger shall also comply with the biosolids monitoring requirements in 40 C.F.R. part 503.

b. If an automatic compositor is used, the Discharger shall obtain 24-hour composite samples through flow-proportioned composite sampling. Alternatively, 24-hour composite samples may consist of discrete grab samples combined (volumetrically flow-weighted) prior to analysis or analyzed separately with the results mathematically flow-weighted.

VIII. RECYCLED WATER MONITORING REQUIREMENTS

A. Influent Monitoring

The Discharger shall monitor the monthly volume of influent to the Oceanside Water Pollution Control Plant.

B. Production Monitoring

The Discharger shall monitor the monthly volumes of effluent from the Oceanside Water Pollution Control Plant and Westside Recycled Water Project for each level of treatment.

C. Discharge Monitoring

The Discharger shall monitor the monthly volumes of effluent from the Oceanside Water Pollution Control Plant and Westside Recycled Water Project discharged to each of the following, for each level of treatment:

1. Inland surface waters, specifying volume required to maintain minimum instream flow;

2. Enclosed bays, estuaries and coastal lagoons, and ocean waters;

3. Natural systems, such as wetlands, wildlife habitats, and duck clubs, where augmentation or restoration has occurred, and that are not part of a wastewater treatment plant or water recycling treatment plant;

4. Underground injection wells, such as those classified by U.S. EPA's Underground Injection Control Program, excluding groundwater recharge via subsurface application intended to reduce seawater intrusion into a coastal aquifer with a seawater interface; and

5. Land, where beneficial use is not taking place, including evaporation or percolation ponds, overland flow, or spray irrigation disposal, excluding pasture or fields with harvested crops.

D. Reuse Monitoring

The Discharger shall monitor the following:

1. Monthly volume of recycled water distributed; and

2. Annual volumes of treated wastewater distributed for beneficial use in compliance with California Code of Regulations, title 22, in each of the use categories listed below:

a. Agricultural irrigation: pasture or crop irrigation;

b. Landscape irrigation: irrigation of parks, greenbelts, and playgrounds; school yards; athletic fields; cemeteries; residential landscaping, common areas; commercial landscaping; industrial landscaping; and freeway, highway, and street landscaping;

c. Golf course irrigation: irrigation of golf courses, including water used to maintain aesthetic impoundments within golf courses;

d. Commercial application: commercial facilities, business use (such as laundries and office buildings), car washes, retail nurseries, and appurtenant landscaping that is not separately metered;

e. Industrial application: manufacturing facilities, cooling towers, process water, and appurtenant landscaping that is not separately metered;

f. Geothermal energy production: augmentation of geothermal fields;

g. Other non-potable uses: including but not limited to dust control, flushing sewers, fire protection, fill stations, snow making, and recreational impoundments;

h. Groundwater recharge: the planned use of recycled water for replenishment of a groundwater basin or an aquifer that has been designated as a source of water supply for a public water system. Includes surface or subsurface application, except for seawater intrusion barrier use;

i. Seawater intrusion barrier: groundwater recharge via subsurface application intended to reduce seawater intrusion into a coastal aquifer with a seawater interface;

j. Reservoir water augmentation: the planned placement of recycled water into a raw surface water reservoir used as a source of domestic drinking water supply for a public water system, as defined in Health and Safety Code section 116275, or into a constructed system conveying water to such a reservoir (Wat. Code § 13561);

k. Raw water augmentation: the planned placement of recycled water into a system of pipelines or aqueducts that delivers raw water to a drinking water treatment plant that provides water to a public water system as defined in Health and Safety Code section 116275 (Wat. Code § 13561); and

l. Other potable uses: both indirect and direct potable reuse other than for groundwater recharge, seawater intrusion barrier, reservoir water augmentation, or raw water augmentation.

IX. REPORTING REQUIREMENTS

A. General Monitoring and Reporting Requirements

The Discharger shall comply with all Standard Provisions (Attachments D, G, and H) related to monitoring, reporting, and recordkeeping.

B. Self-Monitoring Reports (SMRs)

1. **SMR Format.** The Discharger shall electronically submit SMRs using the State Water Board's California Integrated Water Quality System (CIWQS) Program website (http://www.waterboards.ca.gov/water_issues/programs/ciwqs). The CIWQS website will provide additional information for SMR submittal in the event of a service interruption for electronic submittal.

2. **SMR Due Dates and Contents.** The Discharger shall submit SMRs by the due dates, and with the contents, specified below:

   a. Monthly SMRs. Monthly SMRs shall be due 30 days after the end of each calendar month, covering that calendar month. The monthly SMR shall contain the applicable items described in sections V.B and V.C of both Attachments D and G of this Order.

   Monthly SMRs shall include all new monitoring results obtained since the last SMR was submitted. If the Discharger monitors any pollutant more frequently than required by this Order, the Discharger shall include the results of such monitoring in the calculations and reporting for the SMR.

   b. Annual SMR. Annual SMRs shall be due February 1 each year, covering the previous calendar year. The annual SMR shall contain the items described in Attachment G section V.C.1.f. See also Provision VI.C.2 (Effluent Characterization Study and Report) of the Order for requirements to submit reports with the annual SMR.

   c. Specifications for Submitting SMRs to CIWQS. The Discharger shall submit analytical results and other information using one of the following methods:

Table E-14. CIWQS Reporting

Parameter	Method of Reporting	
	EDF/CDF data upload or manual entry	Attached File
All parameters identified in influent, effluent, and receiving water monitoring tables (except Dissolved Oxygen and Temperature)	Required for all results	
Dissolved Oxygen Temperature	Required for monthly maximum and minimum results only [1]	Discharger may use this method for all results or keep records

Parameter	Method of Reporting	
	EDF/CDF data upload or manual entry	**Attached File**
Antimony, Arsenic, Beryllium, Cadmium, Chromium, Copper, Cyanide, Lead, Mercury, Nickel, Selenium, Silver, Thallium, Zinc, Dioxins &Furans (by U.S. EPA Method 1613), Other Pollutants (by U.S. EPA Methods 601, 602, 608, 610, 614, 624, and 625)	Required for all results [2]	
Volume and Duration of Blended Discharge [3]	Required for all blended effluent discharges	
Analytical Method	Not required (Discharger may select "data unavailable") [1]	
Collection Time Analysis Time	Not required (Discharger may select "0:00") [1]	

Footnotes:

[1] The Discharger shall continue to monitor at the minimum frequency specified in this MRP, keep records of the measurements, and make the records available upon request.

[2] These parameters require EDF/CDF data upload or manual entry regardless of whether monitoring is required by this MRP or other provisions of this Order (except for biosolids, sludge, or ash provisions).

[3] The requirement for volume and duration of blended discharge applies only if this Order authorizes the Discharger to discharge blended effluent.

The Discharger shall arrange all reported data in a tabular format and summarize the data to clearly illustrate whether the Facility is operating in compliance with effluent limitations. The Discharger is not required to duplicate the submittal of data entered in a tabular format within CIWQS. When electronic submittal of data is required and CIWQS does not provide for entry into a tabular format, the Discharger shall electronically submit the data in a tabular format as an attachment.

3. **Monitoring Periods.** Monitoring periods for all required monitoring shall be as set forth below unless otherwise specified:

Table E-15. Monitoring Periods

Sampling Frequency	Monitoring Period Begins On…	Monitoring Period
Continuous	Order effective date	All times
1/Day	Order effective date	Every 24-hour period, beginning at midnight and continuing through 11:59 p.m. (or any 24-hour period that reasonably represents a calendar day for purposes of sampling)
1/Week 5/Week	First Sunday following or on Order effective date	Sunday through Saturday

Sampling Frequency	Monitoring Period Begins On…	Monitoring Period
1/Month	First day of calendar month following or on Order effective date	First day of calendar month through last day of calendar month
1/Quarter	Closest of January 1, April 1, July 1, or October 1 following or on Order effective date	January 1 through March 31 April 1 through June 30 July 1 through September 30 October 1 through December 31
1/Year 3/Year	Closest January 1 following or on Order effective date	January 1 through December 31
2/Year	Closest January 1 or July 1 following or on Order effective date	January 1 through June 30 July 1 through December 31
1/Event	As soon as possible after combined sewer discharge event begins	Duration of the combined sewer discharge event

4. **RL and MDL Reporting.** The Discharger shall report with each sample result the Reporting Level (RL) and Method Detection Limit (MDL) as determined by the procedure in 40 C.F.R. part 136. The Discharger shall report the results of analytical determinations for the presence of chemical constituents in a sample using the following reporting protocols:

   a. Sample results greater than or equal to the RL shall be reported as measured by the laboratory (i.e., the measured chemical concentration in the sample).

   b. Sample results less than the RL, but greater than or equal to the laboratory's MDL, shall be reported as "Detected, but Not Quantified," or DNQ. The estimated chemical concentration of the sample shall also be reported.

   For purposes of data collection, the laboratory shall write the estimated chemical concentration next to DNQ. The laboratory may, if such information is available, include numerical estimates of the data quality for the reported result. Numerical estimates of data quality may be percent accuracy (+/- a percentage of the reported value), numerical ranges (low to high), or any other means the laboratory considers appropriate.

   c. Sample results less than the laboratory's MDL shall be reported as "Not Detected", or ND.

   d. The Discharger shall instruct laboratories to establish calibration standards so that the minimum level (ML) value (or its equivalent if there is differential treatment of samples relative to calibration standards) is the lowest calibration standard. At no time is the Discharger to use analytical data derived from extrapolation beyond the lowest point of the calibration curve.

5. **Compliance Determination.** Compliance with effluent limitations shall be determined using sample reporting protocols defined above and in the Fact Sheet and Attachments A, D, and G. For purposes of reporting and administrative enforcement by the Regional Water Board, State Water Board, or U.S. EPA, the Discharger shall be deemed out of compliance with effluent limitations if the concentration of the pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the RL.

C. Discharge Monitoring Reports (DMRs)

DMRs are U.S. EPA reporting requirements. The Discharger shall electronically certify and submit DMRs together with SMRs using the Electronic Self-Monitoring Reports module eSMR 2.5 or the latest upgraded version. Electronic DMR submittal shall be in addition to electronic SMR submittal. Information about electronic DMR submittal is available at the DMR website at http://www.waterboards.ca.gov/water_issues/programs/discharge_monitoring.

D. Annual Recycled Water Reports

The Discharger shall electronically submit annual reports to the State Water Board by April 30 each year covering the previous calendar year using the State Water Board's GeoTracker website (http://geotracker.waterboards.ca.gov) under a site-specific global identification number. For the 2019 calendar year, the Discharger shall submit a report by April 30, 2020, covering January through December 2019. The annual report shall include the elements specified in Attachment E section VIII.

ATTACHMENT F – FACT SHEET

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ATTACHMENT F – FACT SHEET

This Fact Sheet includes the legal requirements and technical rationale that serve as the basis for the requirements of this Order. As described in section II.B of this Order, the Regional Water Board and U.S. EPA incorporate this Fact Sheet as findings supporting the issuance of this Order.

I. PERMIT INFORMATION

The following table summarizes administrative information related to the facility.

Table F-1. Facility Information

WDID	2 386009001
CIWQS Place ID	256498
Discharger	City and County of San Francisco
Name of Facility	Oceanside Water Pollution Control Plant, Wastewater Collection System, and Westside Recycled Water Project
Facility Address	3500 Great Highway San Francisco, CA 94132 San Francisco County
Facility Contact, Title and Phone	Dale Miller, Operations Superintendent, Wastewater Enterprise, (415) 242-2225
Authorized Person to Sign and Submit Reports	Greg Norby, Assistant General Manager, Wastewater Enterprise, (415) 554-2465
Mailing Address	San Francisco Public Utilities Commission/Wastewater Enterprise 525 Golden Gate Ave., 13th Floor, San Francisco, CA 94102
Billing Address	Same
Type of Facility	Publicly-Owned Treatment Works (POTW) and Combined Sewer System
Major or Minor Facility	Major
Threat to Water Quality	2
Complexity	A
Pretreatment Program	Yes
Reclamation Requirements	State Water Board Order WQ 2016-0068-DDW
Facility Permitted Flow	43 million gallons per day (MGD), maximum dry weather flow
Facility Design Flow	Oceanside Water Pollution Control Plant 43 MGD maximum dry weather design flow (secondary treatment) 65 MGD maximum wet weather design flow (secondary treatment for 43 MGD and primary treatment for an additional 22 MGD) Westside Recycled Water Project 4 MGD maximum design flow (1.6 MGD annual average)
Watershed	San Mateo Coastal Basin
Receiving Water	Pacific Ocean
Receiving Water Type	Ocean waters

A. The City and County of San Francisco (Discharger) owns and operates the Oceanside Water Pollution Control Plant and its wastewater collection system. The Discharger plans to construct, own, and operate the Westside Recycled Water Project during this Order's term. Collectively, the Oceanside Water Pollution Control Plant, wastewater collection system, and Westside

Recycled Water Project are referred to as the Facility. The Facility discharges to the Pacific Ocean, a water of the United States.

For the purposes of this Order, references to the "discharger" or "permittee" in applicable federal and state laws, regulations, plans, or policy are held to be equivalent to references to the Discharger herein.

B. The Discharger is regulated pursuant to National Pollutant Discharge Elimination System (NPDES) Permit No. CA0037681. It was previously subject to Order No. R2-2009-0062 (previous order). The Discharger filed a Report of Waste Discharge and submitted an application for reissuance of its waste discharge requirements (WDRs) and NPDES permit on April 3, 2014, and the previous order was administratively extended by operation of law. Order No. R2-2010-0054 amended the previous order to update the Regional Standard Provisions (Attachment G); Order No. R2-2011-0009 amended the previous order to update the pretreatment program requirements (Attachment H).

The Discharger is authorized to discharge subject to the WDRs and NPDES permit requirements in this Order at the discharge locations described in Table 2 of this Order. Regulations at 40 C.F.R. section 122.46 limit the duration of NPDES permits to a fixed term not to exceed five years. Accordingly, Table 3 of this Order limits the duration of the discharge authorization. Pursuant to California Code of Regulations, title 23, section 2235.4, the terms and conditions of an expired permit are automatically continued pending reissuance of the permit if the Discharger complies with all requirements for continuation of expired permits. (See 40 C.F.R § 122.6[d].)

II. FACILITY DESCRIPTION

A. Wastewater and Biosolids Treatment

1. **Location and Service Area.** The Oceanside Water Pollution Control Plant is located at 3500 Great Highway, San Francisco. The plant provides wastewater treatment for western San Francisco and a small portion of Daly City owned and operated by the North San Mateo County Sanitation District. The service area population is approximately 250,000. The Discharger is constructing a recycled water project at the plant site during this Order's term. The wastewater collection system is located throughout the western side of San Francisco. Attachment B shows maps of the Facility area.

2. **Collection System.** The Discharger's collection system is predominantly a combined sewer system with some limited separate sanitary sewers. The combined sewer system consists of approximately 250 miles of pipe, one major pump station (Westside Pump Station), six minor pump stations (four all-weather pump stations: Westside, Sea Cliff No. 1, Sea Cliff No. 2, and Pine Lake; and two wet weather pump stations: Sea Cliff No. 3 and Zoo Wet Weather Lift Station), and three large transport/storage structures (Westside Transport/Storage Structure, a 49.3-million-gallon box-like structure located beneath the Great Highway; Richmond Tunnel, a 12.0-million-gallon tunnel located to the north; and Lake Merced Tunnel, a 10.0-million-gallon tunnel located to the south). The separate sanitary sewer systems serve isolated areas and are also regulated under State Water Board

Order No. 2006-0003-DWQ as amended by State Water Board Order No. WQ 2013-0058-EXEC.

3. Wastewater Treatment

a. Oceanside Water Pollution Control Plant. During dry weather, the plant provides secondary treatment. The treatment processes include coarse screening at the Westside Pump Station, fine screening and grit removal at the plant headworks, primary sedimentation, activated sludge treatment by a high-purity oxygen process, and secondary clarification. The effluent is not disinfected. The plant has a maximum secondary treatment design capacity of about 43 million gallons per day (MGD). During wet weather, the plant can provide primary treatment for about 22 MGD more, which is combined with the secondary-treated effluent prior to discharge for a total treatment capacity of 65 MGD. Plant effluent flows to Discharge Point No. 001 by gravity.

b. Combined Sewer System. The combined storage capacity of the three transport/storage structures is about 71 million gallons. Collection system piping provides about 2 million gallons of additional storage. The transport/storage structures provide flow equalization and convey combined sewer system flows up to 65 MGD to the plant by way of the Westside Pump Station.

Flows above the plant's 65-MGD treatment capacity receive equivalent-to-primary treatment through solids settling, skimming of floatable solids, and in some cases screening within the combined sewer system. In addition to pumping up to 65 MGD to the plant, the Westside Pump Station can also pump flow from the Westside Transport/Storage Structure to Discharge Point No. 001 during wet weather (identified in the previous order as "decant"). The design capacity of the Westside Pump Station wet weather pumps ranges from 98 to 133 MGD depending on the number and model of pumps operating when there are high water levels in the West Box of the Westside Transport/Storage Structure (typically observed during wet weather operations). Flows that exceed the capacities of the Oceanside Water Pollution Control Plant and combined sewer system may discharge from Discharge Point Nos. CSD-001, CSD-002, CSD-003, CSD-004, CSD-005, CSD-006, and CSD-007. Four of these discharge points are directly connected to transport/storage structures (Discharge Point Nos. CSD-001, CSD-002, CSD-003, and CSD-004), and three are associated with pump station sumps (Discharge Point Nos. CSD-005, CSD-006, and CSD-007). After wet weather events, stored combined sewer system flows and accumulated solids remaining in the transport/storage structures are conveyed to the plant for treatment.

4. Sludge and Biosolids Management. The Discharger uses temperature-phased anaerobic digestion, which is capable of producing Class A biosolids. Primary sludge, waste activated sludge, and secondary scum are mixed and co-thickened using gravity belt thickeners prior to being fed to the anaerobic digestion system. The digestion system accepts hauled-in batches of primary and secondary sludge from the Treasure Island Wastewater Treatment Plant. Digested biosolids are dewatered using screw presses and stored in hoppers prior to being loaded into covered trucks for transport. During the wet season, the majority of biosolids are hauled to a landfill for storage and eventual use as interim cover, final cover, or landfill

building material; a small percentage is reused for agricultural land application. During the dry season, biosolids are hauled offsite for agricultural land application.

5. **Water Recycling and Reclamation**. The Discharger is constructing a recycled water project at the Oceanside Water Pollution Control Plant site during this Order's term. Secondary-treated effluent will be treated further with membrane filtration, reverse osmosis, and ultraviolet (UV) light disinfection to produce recycled water. The concentrate from the reverse osmosis process will be commingled with plant effluent prior to discharge at Discharge Point No. 001. Filter backwash water generated at the Westside Recycled Water Project will be directed to the plant headworks for treatment. The project is expected to produce and deliver an annual average flow of 1.6 MGD of recycled water for distribution in the western portion of San Francisco, with peak deliveries of up to 4 MGD during summer. Water recycling operations will not increase the mass of pollutants discharged at Discharge Point No. 001, but will increase the concentration of pollutants discharged. The requirements of this Order account for the discharge from this water recycling project. Reclamation requires waste discharge requirements beyond those specified here, such as those in State Water Board Order No. WQ 2016-0068-DDW (Water Reclamation Requirements for Recycled Water Use).

B. Discharge Points and Receiving Waters

1. **Discharge Point No. 001.** During dry weather, secondary-treated effluent is discharged at Discharge Point No. 001. During wet weather, the discharge at Discharge Point No. 001 comprises primary-treated and secondary-treated effluent from the Oceanside Water Pollution Control Plant and equivalent-to-primary-treated effluent from the Westside Transport/Storage Structure. When the Westside Recycled Water Project becomes operational, reverse osmosis concentrate will also be discharged at Discharge Point No. 001.

   Discharge Point No. 001 is a 4.5-mile-long (3.9 nautical mile-long) deepwater outfall that terminates with a diffuser that begins approximately 3.8 miles (3.3 nautical miles) from shore at a depth of 78 feet below mean lower low water (MLLW). The diffuser has 85 risers spread along a 3,000-foot outfall pipe. Each riser has eight ports. Discharge Point No. 001 discharges to the Pacific Ocean beyond the territorial waters of the State, which end three nautical miles from MLLW at shore.

2. **Discharge Point Nos. CSD-001, CSD-002, CSD-003, CSD-004, CSD-005, CSD-006, and CSD-007.** During wet weather, equivalent-to-primary-treated wastewater is discharged to the Pacific Ocean at Discharge Point Nos. CSD-001, CSD-002, CSD-003, and CSD-004 when the Westside Pump Station capacity is exceeded, and at Discharge Point Nos. CSD-005, CSD-006, and CSD-007 when the capacities of the corresponding pump stations (i.e., Sea Cliff No. 1 and Sea Cliff No. 2 Pump Stations) are exceeded, including the capacity of the wet well connected to Discharge Point No. CSD-006. These discharge points are located within the territorial waters of the State.

C. Summary of Previous Requirements and Self-Monitoring Data

1. **Dry Weather.** Dry weather effluent limitations and representative monitoring data from the previous order term are presented below for discharges from the Oceanside Water Pollution Control Plant at Discharge Point No. 001:

Table F-2. Previous Dry Weather Effluent Limitations and Monitoring Data

Parameter	Units	Effluent Limitations				Monitoring Data (1/2011 – 12/2017)				
		6-Month Median	Monthly Average	Weekly Average	Daily Max.	Median	Highest 6-Month Median	Highest Monthly Average	Highest Weekly Average	Highest Daily Max.
Biochemical Oxygen Demand, 5-day @ 20°C (BOD_5)	mg/L	---	30	45	---	15	---	29	51 [1]	---
Total Suspended Solids (TSS)	mg/L	---	30	45	---	10	---	18	26	---
BOD_5 percent removal	%	---	85 (min.)	---	---	95	---	87 [2]	---	---
TSS percent removal	%	---	85 (min.)	---	---	96	---	92 [2]	---	---
pH	s.u.	Within a range of 6.0 – 9.0				Within a range of 6.0 – 8.3				
Chronic Toxicity	TU_c	---	---	---	150	50	---	---	---	149
Mercury	µg/L	5.9	---	---	24	0.0068	0.0093	---	---	0.071

Abbreviations:

Max. = maximum
min. = minimum
mg/L = milligrams per liter
µg/L = micrograms per liter
s.u. = standard units
TU_c = chronic toxicity units

Footnotes:

[1] The Discharger exceeded the weekly average effluent limitation three times during the previous order term, in October 2013, July 2014, and June 2017. The Discharger attributes these exceedances to the presence of nitrifying bacteria since carbonaceous biochemical oxygen demand ($CBOD_5$) concentrations were within the expected range. This Order allows $CBOD_5$ effluent limitations to be substituted for BOD_5 effluent limitations to address this concern, as described in Fact Sheet section IV.B.2, below.

[2] Lowest monthly average.

2. **Wet Weather.** Wet weather requirements from the previous order term included implementation of the nine minimum controls and the long-term control plan. The combined sewer system was designed to achieve a long-term average of eight combined sewer discharges per year. The following two tables summarize combined sewer discharges over a 20-year period and average combined sewer discharge durations for wet season 2012-2013.

Table F-3. Combined Sewer Discharge Frequency

Year (July 1 – June 30)	Rain (inches)	Number of Combined Sewer Discharges [1]						
		Lake Merced CSD-001	Vicente CSD-002	Lincoln CSD-003	Mile Rock CSD-004	Sea Cliff No. 1 CSD-005	Sea Cliff Sewer CSD-006	Sea Cliff No. 2 CSD-007
1997-1998	41.1	10	13	13	[2]	2	[3]	10

Year (July 1 – June 30)	Rain (inches)	Number of Combined Sewer Discharges [1]						
		Lake Merced CSD-001	Vicente CSD-002	Lincoln CSD-003	Mile Rock CSD-004	Sea Cliff No. 1 CSD-005	Sea Cliff Sewer CSD-006	Sea Cliff No. 2 CSD-007
1998-1999	18.9	6	7	7	[2]	0	[3]	0
1999-2000	23.2	5	6	6	[2]	1	[3]	1
2000-2001	13.8	2	0	0	[2]	2	[3]	2
2001-2002	24.4	6	6	6	[2]	1	[3]	1
2002-2003	22.3	5	6	6	[2]	1	[3]	7
2003-2004	18.8	4	4	4	[2]	2	[3]	8
2004-2005	26.2	7	7	6	[2]	5	[3]	8
2005-2006	31.8	11	9	9	[2]	3	[3]	9
2006-2007	14.8	2	1	1	[2]	0	[3]	2
2007-2008	18.4	4	4	4	[2]	0	[3]	1
2008-2009	18.3	4	4	4	[2]	0	[3]	1
2009-2010	25.8	4	3	3	[2]	6	[3]	7
2010-2011	30.1	5	4	4	[2]	0	0	3
2011-2012	17.0	3	3	2	[2]	2	0	3
2012-2013	19.7	6	6	6	[2]	3	1	3
2013-2014	12.0	3	2	2	[2]	0	1	3
2014-2015	17.7	6	6	6	[2]	3	0	4
2015-2016	18.6	9	8	6	[2]	1	0	4
2016-2017	32.4	13	13	13	[2]	1	0	14
2017-2018	18.0	3	3	3	[2]	0	0	5
Average	**22.1**	**5.6**	**5.5**	**5.3**	[2]	**1.5**	**0.3**	**4.6**

Footnotes:

[1] This table reflects rain and discharge frequencies reported in monthly self-monitoring reports.

[2] The previous order did not require monitoring at Discharge Point No. CSD-004.

[3] The Discharger did not monitor combined sewer discharge frequency at Discharge Point No. CSD-006 until it installed telemetry in 2010.

Table F-4. Combined Sewer Discharge Duration (July 1, 2012, through June 30, 2013)

	Lake Merced CSD-001	Vicente CSD-002	Lincoln CSD-003	Mile Rock CSD-004	Sea Cliff No. 1 CSD-005	Sea Cliff Sewer CSD-006	Sea Cliff No. 2 CSD-007
Days with Rainfall	53	53	53	[1]	53	53	53
Discharge Events	6	6	6 [2]	[1]	3	1	3
Average Duration (hours)	2.39	3.28	3 [2]	[1]	0.08	0.58	0.28
Average Volume/Event (million gallons)	2.75	3.16	[2]	[1]	0.002	0.08	0.01

Footnotes:

[1] The previous order did not require monitoring at Discharge Point No. CSD-004.

[2] Telemetry equipment for Discharge Point No. CSD-003 was not operational in December 2012. Due to similar weir heights and positions within the system, discharges likely occur simultaneously at Discharge Point Nos. CSD-002 and CSD-003. As such, about six discharges likely occurred from Discharge Point No. CSD-003 between July 1, 2012, and June 30, 2013, lasting an average duration of about 3 hours.

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

A. Legal Authorities

This Order serves as WDRs pursuant to California Water Code article 4, chapter 4, division 7 (commencing with § 13260) for discharges to waters of the State. This Order is also issued pursuant to federal Clean Water Act (CWA) section 402 and implementing regulations adopted by U.S. EPA, and Water Code chapter 5.5, division 7 (commencing with § 13370). It serves as an NPDES permit for point source discharges from the Facility to surface waters.

B. California Environmental Quality Act

Under Water Code section 13389, this action to adopt an NPDES permit is exempt from the provisions of the California Environmental Quality Act, Public Resources Code division 13, chapter 3 (commencing with § 21100). On September 3, 2015, the San Francisco Planning Commission certified the Final Environmental Impact Report for the Westside Recycled Water Project, finding that the Discharger, acting through the San Francisco Planning Department, fulfilled all California Environmental Quality Act procedural requirements.

C. State and Federal Laws, Regulations, Policies, and Plans

1. **Water Quality Control Plan.** The Regional Water Board adopted the *Water Quality Control Plan for the San Francisco Bay Basin* (Basin Plan), which designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters in the San Francisco Bay Region. Requirements of this Order implement the Basin Plan. The table below lists the beneficial uses the Basin Plan attributes to the Pacific Ocean:

Table F-5. Basin Plan Beneficial Uses

Receiving Water	Beneficial Uses
Pacific Ocean	• Industrial Service Supply (IND) • Commercial and Sport Fishing (COMM) • Shellfish Harvesting (SHELL) • Marine Habitat (MAR) • Fish Migration (MIGR) • Preservation of Rare and Endangered Species (RARE) • Fish Spawning (SPWN) • Wildlife Habitat (WILD) • Water Contact Recreation (REC1) • Noncontact Water Recreation (REC2) • Navigation (NAV)

Basin Plan Table 4-1, Discharge Prohibition 1, prohibits wastewater discharges with particular characteristics of concern to beneficial uses at any point at which the wastewater does not receive a minimum initial dilution of at least 10:1. Basin Plan section 4.2 provides for exceptions under certain circumstances:

- An inordinate burden would be placed on the Discharger relative to the beneficial uses protected, and an equivalent level of environmental protection can be achieved by alternate means;
- A discharge is approved as part of a reclamation project;
- Net environmental benefits will be derived as a result of the discharge; or
- A discharge is approved as part of a groundwater cleanup project.

The Basin Plan further states:

> Significant factors to be considered by the Regional Water Board in reviewing requests for exceptions will be the reliability of the discharger's system in preventing inadequately treated wastewater from being discharged to the receiving water and the environmental consequence of such discharges.

During wet weather, this Order grants an exception to Basin Plan Discharge Prohibition 1 for discharges at Discharge Point Nos. CSD-001, CSD-002, CSD-003, CSD-004, CSD-005, CSD-006, and CSD-007 for the following reasons:

- Eliminating all wet weather combined sewer discharges or ensuring that these discharges receive a minimum initial dilution of 10:1 would be an inordinate burden disproportionate to the beneficial uses protected. The Discharger continues to invest in infrastructure to improve the combined sewer system (San Francisco Public Utilities Commission Wastewater Enterprise, *Report of Waste Discharge, Supplemental Information, Capital Improvements and Operational Changes*, April 3, 2014). This Order continues to require capture and treatment of all combined wastewater and stormwater. This Order also requires the Discharger to evaluate control alternatives to eliminate, relocate, or reduce the magnitude or frequency of combined sewer discharges.

- An equivalent level of environmental protection is provided because operating a combined sewer system, as opposed to a separate sewer system, removes many pollutants in urban runoff that elsewhere in the Region are discharged through stormwater outfalls with little or no treatment. This additional treatment comes at the cost of occasionally discharging partially-treated combined sewage and stormwater through Discharge Point Nos. CSD-001, CSD-002, CSD-003, CSD-004, CSD-005, CSD-006, and CSD-007. The Monitoring and Reporting Program (MRP) (Attachment E) requires the Discharger to monitor combined sewer discharges and receiving waters to verify that an equivalent level of environmental protection is provided.

2. **California Ocean Plan.** The State Water Board adopted the *Water Quality Control Plan for Ocean Waters of California, California Ocean Plan* (Ocean Plan) in 1972 and has amended it several times, including in 1978 and most recently in 2018. The most recent changes became effective February 4, 2019. The Ocean Plan establishes water quality objectives and a program of implementation to protect beneficial uses of the Pacific Ocean within the territorial waters of the State.

   The territorial waters of the State end 3 nautical miles from shore. Discharge Point No. 001 is approximately 3.8 miles (3.3 nautical miles) offshore in federal waters. The Ocean Plan

(Appendix 1, Ocean Waters) states, "If a discharge outside the territorial waters of the State could affect the quality of the waters of the State, the discharge may be regulated to assure no violation of the Ocean Plan will occur in ocean waters." This Order contains discharge prohibitions, effluent limitations, receiving water limitations, and other provisions to ensure that discharges from Discharge Point No. 001 do not affect State waters. This Order's requirements related to Discharge Point No. 001 are based on U.S. EPA's federal authorities pursuant to the Clean Water Act.

a. Beneficial Uses. The table below lists the beneficial uses the Ocean Plan assigns to the Pacific Ocean:

Table F-6. Ocean Plan Beneficial Uses

Receiving Water	Beneficial Uses
Pacific Ocean	• Industrial Water Supply • Water Contact and Non-Contact Recreation, including Aesthetic Enjoyment • Navigation • Commercial and Sport Fishing • Mariculture • Preservation and Enhancement of Designated Areas of Special Biological Significance (ASBS) • Rare and Endangered Species • Marine Habitat • Fish Migration • Fish Spawning • Shellfish Harvesting

b. State Water Board Order No. WQ 79-16. During wet weather, State Water Board Order No. WQ 79-16 sets forth requirements for discharges from Discharge Point Nos. CSD-001, CSD-002, CSD-003, CSD-004, CSD-005, CSD-006, and CSD-007. Ocean Plan chapter III.J allows the State Water Board to grant exceptions to Ocean Plan requirements on a case-by-case basis if the public interest is served and the exception does not compromise beneficial uses (exceptions are listed in Ocean Plan Table VII-1). In 1979, the State Water Board granted the Discharger an exception from Ocean Plan requirements and imposed conditions, including but not limited to the following:

- Except for the bacteriological standards, to the greatest extent practical, the Discharger is to design, construct, and operate facilities to conform to the remaining standards set forth in chapter II of the 1978 Ocean Plan. These standards relate to physical characteristics (i.e., floating particulates, discoloration, natural light, and inert solids deposition), chemical characteristics (i.e., dissolved oxygen, pH, dissolved sulfide, toxic and organic chemicals in marine sediments, and nutrients), biological characteristics (i.e., marine communities and taste, odor, and color of marine resources used for human consumption), and radioactivity. Provisions V and VI.C.5 of this Order, and Attachments D and G sections I.C and I.D, require the Discharger to design, construct, and operate its facilities to conform to these standards to the greatest extent practical.

- To the greatest extent practical, the Discharger is to design, construct, and operate facilities to comply with the conditions controlled by the requirements set forth in chapter III, sections A and B, of the 1978 Ocean Plan. These requirements call for waste management systems to be designed and operated in a manner that will maintain indigenous marine life and a healthy and diverse marine community. They also call for waste discharges to be essentially free of floatable and settleable material, substances toxic to marine life due to increases in concentrations in water or sediments, substances that significantly decrease natural light, and materials that result in esthetically undesirable discoloration of the ocean surface. Provisions V and VI.C.5 of this Order and Attachments D and G sections I.C and I.D require the Discharger to design, construct, and operate its facilities to conform to these requirements to the greatest extent practical.

- The Discharger is to design and construct facilities to contain all stormwater runoff beyond that associated with an average of eight combined sewer discharges per year. Section III and Provision VI.C.5.c of this Order implement this condition.

- Beaches affected by combined sewer discharges are to be posted with warning signs beginning when the discharge commences until analysis indicates that water quality meets Ocean Plan bacteriological standards for recreation. Provision VI.C.5.a.viii of this Order implements this condition.

- Shellfish areas harvested for human consumption that may be affected by combined sewer discharges are to be posted with warning signs beginning when the discharge commences until the City and County Health Department indicates that no further posting is required. Provision VI.C.5.a.viii of this Order implements this condition.

- The Discharger is to comply with federal and State source control programs to minimize the entry of toxic substances into the waste collection system from industrial sources. Provisions VI.C.4.b and VI.C.5.a.iii of this Order and Attachment H implement this condition.

- The Discharger is to implement a self-monitoring program in accordance with Regional Water Board specifications. Provision VI.B of this Order and Attachment E implement this condition.

State Water Board Order No. WQ 79-16 explains the rationale for this exception and its conditions. It also states that the Regional Water Board or U.S. EPA may require construction of additional facilities or modification of existing Facility operations if it finds (1) changes in the location, intensity, or importance of affected beneficial uses, or (2) demonstrated unacceptable adverse impacts result from Facility operations as currently constructed.

3. **Combined Sewer Overflow (CSO) Control Policy.** On April 11, 1994, U.S. EPA adopted the *Combined Sewer Overflow (CSO) Control Policy* to establish a national approach for controlling combined sewer discharges and overflows (59 Fed. Reg. 18688-18698, April 19, 1994). The Wet Weather Water Quality Act of 2000 amended the CWA to require that

permits issued after December 21, 2000, for discharges from combined sewer systems conform to the *Combined Sewer Overflow (CSO) Control Policy* (33 U.S.C. § 1342[q][1]). Requirements of this Order implement the *Combined Sewer Overflow (CSO) Control Policy*, including the implementation of the nine minimum controls, a Long-Term Control Plan, and a post-construction monitoring program. (See Fact Sheet § VI.C.5.)

4. **Antidegradation Policy.** Federal regulations at 40 C.F.R. section 131.12 require that state water quality standards include an antidegradation policy consistent with stated requirements. The State Water Board established California's antidegradation policy through State Water Board Resolution No. 68-16, "*Statement of Policy with Respect to Maintaining High Quality of Waters in California*," which meets the federal antidegradation policy requirements. Resolution No. 68-16 requires that existing water quality be maintained unless degradation is justified based on specific findings. The Basin Plan implements, and incorporates by reference, the antidegradation policy. Permitted discharges must be consistent with the antidegradation provisions of 40 C.F.R. section 131.12 and Resolution No. 68-16. (See Fact Sheet § IV.D.2.)

5. **Anti-Backsliding Requirements.** CWA sections 402(o) and 303(d)(4) and 40 C.F.R. section 122.44(l) restrict backsliding in NPDES permits. These anti-backsliding provisions require that effluent limitations in a reissued permit be as stringent as those in the previous permit, with some exceptions in which limitations may be relaxed. (See Fact Sheet § IV.D.1.)

6. **Endangered Species Act Requirements.** This Order does not authorize any act that results in the taking of a threatened or endangered species or any act that is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish and Game Code §§ 2050 to 2097) or the federal Endangered Species Act (16 U.S.C. §§ 1531 to 1544). This Order requires compliance with effluent limits, receiving water limits, and other provisions to protect beneficial uses, including protecting rare and endangered species. The Discharger is responsible for meeting all Endangered Species Act requirements.

   U.S. EPA's reissuance of this NPDES permit is subject to certain requirements of the federal Endangered Species Act of 1973 and the Magnuson-Stevens Fishery Conservation and Management Act. In October 2017, U.S. EPA requested updated information from the National Marine Fisheries Service and the U.S. Fish and Wildlife Service (collectively, the Services) related to (1) essential fish habitat and managed and associated species, and (2) threatened and endangered species and their designated critical habitats near Discharge Point No. 001. U.S. EPA made a "may affect, not likely to adversely affect" determination for the southern California steelhead, Central California Coho salmon, Central Valley, spring-run chinook salmon, Sacramento River winter-run chinook salmon, humpback whale, leatherback turtle, green sea turtle, loggerhead turtle, white abalone, and olive ridley sea turtle; and a "no effect" determination for the remaining listed species under the Services' jurisdictions (*U.S. EPA Biological Evaluation*, September 2018). U.S. EPA provided a revised biological evaluation to the Services in April 2019. U.S. EPA may decide that changes to this Order are warranted based on the results of the completed consultation, and may modify or reopen it prior to the expiration date as described in Provision VI.C.1 of this Order.

7. **Sludge and Biosolids.** U.S. EPA administers 40 C.F.R. part 503, "Standards for the Use or Disposal of Sewage Sludge," which regulates the final use or disposal of sewage sludge generated during the treatment of domestic sewage in a municipal wastewater treatment facility. This Order does not authorize any act that violates those requirements. The Discharger is responsible for meeting all applicable requirements of 40 C.F.R. part 503.

8. **Ocean Discharge Criteria Evaluation.** CWA section 403(c) and implementing regulations at 40 C.F.R. part 125, subpart M, establish ocean discharge criteria for preventing unreasonable degradation of the marine environment of the territorial seas, contiguous zones, and oceans. The regulations at 40 C.F.R. section 125.122(b) allow a permitting authority to presume that a discharge will not cause unreasonable degradation for specific pollutants or conditions if the discharge complies with state water quality standards. This Order implements State water quality standards for discharges from Discharge Point Nos. CSD-001, CSD-002, CSD-003, CSD-004, CSD-005, CSD-006, and CSD-007. This Order also implements State water quality standards for discharges from Discharge Point No. 001, with the modifications described below.

   This Order's requirements for Discharge Point No. 001 are consistent with the Ocean Plan, except with respect to chronic toxicity and TCDD equivalents. In all other respects, therefore, U.S. EPA presumes that the discharge will not cause unreasonable degradation. With respect to chronic toxicity and TCDD equivalents, U.S. EPA is required to consider the site-specific factors listed in 40 C.F.R. section 125.122(a). U.S. EPA prepared an evaluation under CWA section 403(c) for chronic toxicity and TCDD equivalents and concluded that no unreasonable degradation of ocean waters will occur.

9. **Coastal Zone Management Act.** The California Coastal Commission has indicated that it is unnecessary to obtain a consistency certification pursuant to the Coastal Zone Management Act (16 U.S.C. § 1451 et seq.).

D. Impaired Waters on CWA 303(d) List

On April 6, 2018, U.S. EPA approved a revised list of California's impaired waters pursuant to CWA section 303(d), which requires identification of specific waters where it is expected that water quality standards will not be met after implementation of technology-based effluent limitations on point sources. Where it has not done so already, the Regional Water Board plans to adopt total maximum daily loads (TMDLs) for waters on the 303(d) list. TMDLs establish wasteload allocations for point sources and load allocations for nonpoint sources, and are established to achieve the water quality standards for the impaired waters. This Order does not authorize any discharge to receiving waters on California's list of impaired waters.

IV. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

The CWA requires point source dischargers to control the amount of conventional, non-conventional, and toxic pollutants discharged into the waters of the United States. The control of pollutants discharged is established through effluent limitations and other requirements in NPDES permits. There are two principal bases for effluent limitations: 40 C.F.R. section 122.44(a) requires that permits include applicable technology-based limitations and standards; and 40 C.F.R.

section 122.44(d) requires that permits include water quality-based effluent limitations to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving water.

A. Discharge Prohibitions

1. **Prohibition III.A (Discharge different than described).** This prohibition is based on 40 C.F.R. section 122.21(a) and Water Code section 13260, which require filing an application and Report of Waste Discharge before a discharge can occur. Discharges not described in the application and Report of Waste Discharge, and subsequently in this Order, are prohibited.

2. **Prohibition III.B (Bypass of untreated or partially-treated wastewater).** This prohibition is based on the *Combined Sewer Overflow (CSO) Control Policy* and 40 C.F.R. section 122.41(m) (see Attachment D section I.G). Pursuant to 40 C.F.R. section 122.41(m)(4)(ii), the Regional Water Board and U.S. EPA approve bypass of the biological treatment units (i.e., blending primary-treated effluent with biologically-treated effluent) during wet weather, when treatment plant influent flow exceeds 43 MGD (the hydraulic capacity of the biological treatment units), because such bypass meets the criteria for approval set forth in 40 C.F.R. sections 122.41(m)(4)(i)(A)-(C):

   - When influent flow exceeds 43 MGD, bypass of biological treatment is unavoidable to prevent loss of life, personal injury, or severe property damage. Such bypass prevents the washout of solids and the microbial population from the biological treatment system and thus ensures treatment reliability. Moreover, such bypass prevents backups and flooding in the community that could cause personal injury or severe property damage.

   - There are no feasible alternatives to bypass when influent flow exceeds 43 MGD. Provisions VI.C.5.c and VI.C.5.d require the Discharger to implement all feasible measures to maximize treatment. As long as the Discharger complies with these provisions, it is implementing all feasible alternatives to avoid bypass during wet weather.

   - The Discharger provided notice at least ten days before any wet weather bypass in its *Report of Waste Discharge, Oceanside Water Pollution Control Plant and Westside Wet Weather Facilities* (April 3, 2014) and *Wastewater Enterprise Westside Operations Summary Baseline Report* (March 2014).

3. **Prohibition III.C (Discharge at Discharge Point No. 001 without minimum initial dilution of at least 148:1).** This prohibition is necessary to ensure that the assumptions used to derive the dilution credits established through this Order for Discharge Point No. 001 remain substantially the same so the effluent limitations at Discharge Point No. 001 remain protective of water quality. This Order considered a dilution credit of 148:1, as modeled assuming no currents, based on the Discharger's *Southwest Ocean Outfall Dilution Modeling Report, Final Report* (April 2014) to conduct the reasonable potential analysis described in Fact Sheet section IV.C.4. Moreover, the in-stream waste concentration (IWC) to be used to evaluate compliance with this Order's chronic toxicity effluent limitation is based on this dilution credit. When the Discharger produces 1.0 MGD of recycled water and discharges

reverse osmosis concentrate, the IWC for chronic toxicity testing reflects a dilution credit of 266:1, as modeled assuming currents. Both dilution credits correspond to the same outfall configuration, which this prohibition seeks to maintain.

4. **Prohibition III.D (Discharge from location other than Discharge Point No. 001, except during wet weather).** This prohibition clarifies that any discharges other than those to Discharge Point No. 001 are unauthorized, except those to Discharge Point Nos. CSD-001, CSD-002, CSD-003, CSD-004, CSD-005, CSD-006, and CSD-007 as explicitly authorized during wet weather in accordance with the *Combined Sewer Overflow (CSO) Control Policy*.

5. **Prohibition III.E (Discharge in excess of permitted flow).** This Order prohibits an average dry weather effluent flow greater than 43 MGD based on the plant's secondary treatment design capacity. Exceeding the secondary treatment design capacity could result in lowering the reliability of achieving this Order's treatment requirements.

B. Technology-Based Effluent Limitations

1. **Scope and Authority.** CWA section 301(b) and 40 C.F.R. section 122.44 require that permits include conditions meeting applicable technology-based requirements, at a minimum, and any more stringent effluent limitations necessary to meet water quality standards.

2. **Oceanside Water Pollution Control Plant.** During dry weather, the technology-based requirements for the Oceanside Water Pollution Control Plant are based on the Secondary Treatment Standards at 40 C.F.R. section 133.102, listed in the following table:

Table F-7. Secondary Treatment Requirements

Parameter	Monthly Average	Weekly Average
BOD_5 [1,2]	30 mg/L	45 mg/L
$CBOD_5$ [1,2]	25 mg/L	40 mg/L
TSS [2]	30 mg/L	45 mg/L
pH	6.0 – 9.0 standard units	

Abbreviation:

mg/L = milligrams per liter

Footnotes:

[1] $CBOD_5$ effluent limitations may be substituted for BOD_5 effluent limitations.

[2] The monthly average percent removal, by concentration, is not to be less than 85 percent.

This Order does not include the additional technology-based effluent limitations established in Ocean Plan chapter III.B.1 (i.e., oil and grease, turbidity, settleable solids) because the plant provides secondary treatment.

During wet weather, the *Combined Sewer Overflow (CSO) Control Policy* establishes the minimum technology-based requirements for combined sewer systems as the implementation of the nine minimum controls based on 40 C.F.R. section 125.3. Provision VI.C.5.a of this Order contains these requirements.

3. **Westside Recycled Water Project.** Ocean Plan chapter III.B.1 establishes technology-based effluent limitations for publicly-owned treatment works and industrial discharges for which effluent limitation guidelines have not been established pursuant to CWA sections 301, 302, 304, or 306. This Order requires Westside Recycled Water Project discharges to meet the minimum technology-based effluent limitations established in Ocean Plan Table 2, listed in the following table:

Table F-8. Ocean Plan Table 2 Effluent Limitations

Parameter	Units	Monthly Average	Weekly Average	Instantaneous
Oil and Grease	mg/L	25	40	75
TSS	mg/L	60 [1]	---	---
Settleable Solids	mL/L	1.0	1.5	3.0
Turbidity	NTU	75	100	225
pH	standard units	within 6.0 to 9.0 range (all times)		

Abbreviations:

mg/L = milligrams per liter
mL/L = milliliters per liter
NTU = nephelometric turbidity units

Footnote:

[1] Ocean Plan Table 2 notes state, "Suspended Solids: Dischargers shall, as a 30-day average, remove 75% of suspended solids from the influent stream before discharging wastewaters to the ocean, except that the effluent limitation to be met shall not be lower than 60 mg/L." Because the monthly average effluent limitation for suspended solids has been established as 60 mg/L, the Discharger is not required to remove 75% of influent suspended solids.

4. **Combined Sewer System.** The Westside Transport/Storage Structure and combined sewer discharge points discharge only during wet weather. As such, the *Combined Sewer Overflow (CSO) Control Policy* establishes the minimum technology-based requirements for combined sewer systems as the implementation of nine minimum controls based on 40 C.F.R. section 125.3. Provision VI.C.5.a of this Order contains these requirements.

C. Water Quality-Based Effluent Limitations (WQBELs)

1. Scope and Authority

CWA section 301(b) and 40 C.F.R. section 122.44(d) require that permits include limitations more stringent than federal technology-based requirements where necessary to achieve applicable water quality standards. According to 40 C.F.R. section 122.44(d)(1)(i), permits must include effluent limitations for all pollutants that are or may be discharged at levels that have a reasonable potential to cause or contribute to an exceedance of a water quality standard, including numeric and narrative objectives within a standard. Where reasonable potential has been established for a pollutant, but there is no numeric criterion or objective, WQBELs must be established using (1) U.S. EPA criteria guidance under CWA section 304(a), supplemented where necessary by other relevant information; (2) an indicator parameter for the pollutant of concern; or (3) a calculated numeric water quality criterion, which may be derived using a proposed state criterion or policy interpreting a state narrative water quality criterion, supplemented with other relevant information (40 C.F.R. § 122.44[d][1][vi]). The process for determining reasonable potential and calculating WQBELs is intended to achieve applicable water quality objectives and criteria, protect the

designated uses of receiving waters as specified in the Basin Plan and Ocean Plan, and ensure no unreasonable degradation under CWA section 403(c) and 40 C.F.R. part 125, subpart M.

During dry weather, this Order imposes numeric effluent limitations at Discharge Point No. 001 for pollutants with reasonable potential to cause or contribute to exceedances of water quality standards.

During wet weather, this Order imposes narrative effluent limitations, not numeric limitations. In accordance with the *Combined Sewer Overflow (CSO) Control Policy*, this Order requires the Discharger to implement and update its Long-Term Control Plan. The *Combined Sewer Overflow (CSO) Control Policy* describes the presumption and demonstration approaches regarding water quality-based requirements and requires that a post-construction water quality monitoring program be in place to verify compliance with applicable water quality standards. This Order requires the combined sewer system to capture 100 percent of combined wastewater and stormwater and provide equivalent-to-primary treatment consisting of floatables and settleable solids removal. Provision VI.C.5.d (Task 3.b) of the Order requires the Discharger to assess the feasibility and necessity of disinfecting combined sewer discharges.

2. Beneficial Uses and Water Quality Objectives

Fact Sheet sections III.C.1 and III.C.2, above, identify the beneficial uses of the Pacific Ocean. Ocean Plan chapter II (including Table 1) lists water quality objectives for the Pacific Ocean.

3. Minimum Initial Dilution

In accordance with Ocean Plan chapter III.C, the minimum initial dilution at Discharge Point No. 001 can be estimated by experimental observation or computer simulation. The Discharger submitted an updated dilution study in April 2014, *Southwest Ocean Outfall (Discharge Point No. 001) Dilution Modeling Report – Final*, which estimated dilution based on NRFIELD and UM3 models and ambient water data measured from April 2012 through October 2013. Based on the more conservative estimate assuming no currents, the minimum initial dilution ratio is 148:1 (148 parts seawater per 1 part wastewater). This represents the minimum 30-day average dilution during the period of maximum stratification, observed from November 2012 through January 2013. The Discharger's dilution study also estimated dilution based on existing current velocity data measured at mid-depth of the water column. Accounting for ocean currents, the more conservative estimate of the minimum 30-day average dilution during the period of maximum stratification is 266:1.

A minimum initial dilution of 148:1 is used in the reasonable potential analysis described in Fact Sheet section III.C.4, below. The IWC to be used in chronic toxicity testing is also based on this minimum initial dilution, except when the Westside Recycled Water Project operates at full capacity to produce 1.0 MGD of recycled water, in which case the IWC is to be based on a minimum initial dilution of 266:1 as described in MRP section V.A.2. This increase in minimum initial dilution accounts for ocean currents, which move parallel to the coast, not

toward State waters (*Assessment of Effects on California State Waters from the Oceanside Southeast Ocean Outfall*, September 26, 2008).

4. Need for Water Quality-Based Effluent Limitations (Reasonable Potential Analysis)

a. Methodology

i. Dry Weather. Ocean Plan Appendix VI sets forth a procedure for reasonable potential analyses applicable to dry weather discharges from Discharge Point No. 001. The procedure assumes a lognormal distribution for the effluent data and compares the 95th percentile concentration at 95 percent confidence for each parameter listed in Ocean Plan Table 1, accounting for dilution, to the applicable water quality objective listed in Ocean Plan Table 1. The analysis results in one of three endpoints for each pollutant based on four triggers:

- Endpoint 1 – There is reasonable potential. WQBELs and monitoring are required.
- Endpoint 2 – There is no reasonable potential. WQBELs are not required, but monitoring may be required.
- Endpoint 3 – The analysis is inconclusive. Any existing WQBELs are retained and monitoring is required.

The four triggers are as follows:

(a) Trigger 1. If any detected value after adjustment for dilution (X) is greater than the applicable water quality objective (Co), then Endpoint 1 applies.

For Table 1 pollutants:	$X = (Ce + Dm\ Cs) / (Dm + 1)$
For acute toxicity:	$X = Ce / (0.1\ Dm + 1)$
Where:	Ce is the effluent concentration
	Dm is the minimum initial dilution expressed as parts seawater per part wastewater (148:1)
	Cs is the background seawater concentration from Ocean Plan Table 3.

(b) Trigger 2. If there are three or more detected values and the number of non-detected (ND) or detected but not quantified (DNQ) values (c) is less than or equal to 80 percent of the number of data points (n) (i.e., if $c/n \leq 80\%$), a parametric reasonable potential analysis is performed. If the calculated upper confidence bound is greater than Co, then Endpoint 1 is concluded; otherwise Endpoint 2 is concluded.

(c) Trigger 3. If there are less than three detected values or if there are more than three detected values but the percentage of non-detected (ND) or detected but not quantified (DNQ) values is more than 80 percent (i.e., if $c/n > 80\%$), a non-

parametric reasonable potential analysis is performed. Depending on the results, either Endpoint 2 or Endpoint 3 is concluded.

(d) Trigger 4. If any other information about the receiving water or the discharge supports a finding of reasonable potential, then the reasonable potential analysis may be based on best professional judgment. If data or other information is unavailable or insufficient to determine if a WQBEL is required, Endpoint 3 is concluded. Otherwise, either Endpoint 1 or Endpoint 2 is concluded.

ii. Wet Weather. For wet weather discharges from Discharge Point No. 001 and the combined sewer discharge points, the requirements described in Provision VI.C.5.c of the Order serve as narrative WQBELs.

b. Effluent Data. Since the Westside Recycled Water Project is expected to become operational during this permit term, two reasonable potential analyses were performed based on the Ocean Plan methodology: one based on current effluent quality and one based on potential future Westside Recycled Water Project effluent quality. In both cases, the analyses were based on dry weather effluent monitoring data the Discharger collected for Discharge Point No. 001 from January 2011 through December 2017. However, with full operation of the Westside Recycled Water Project, the Discharger anticipates that the discharge could potentially consist entirely of reverse osmosis concentrate approximately 1.4 percent of the time. Under these rare circumstances, the effluent could be as much as four times more concentrated when compared to existing conditions. For purposes of the Westside Recycled Water Project reasonable potential analysis, however, existing effluent data were multiplied by a concentration factor of 1.5, which reflects the foreseeable increase based on a 30-day averaging period. This concentration factor is sufficient to evaluate reasonable potential when the most stringent objectives (those with six-month averaging periods) apply.

c. Reasonable Potential Analysis Results. The following tables present the results of the two reasonable potential analyses performed (i.e., existing conditions and potential future Westside Recycled Water Project conditions). The analyses show reasonable potential for chronic toxicity based on Trigger 4. Chronic toxicity tests are intended to detect toxicity from a wide range of pollutants, and since the Facility has a municipal combined sewer system, there is a reasonable potential that unanticipated pollutants could be discharged into the system. Moreover, effluent monitoring data collected during the previous order term showed chronic toxicity at levels close to the previous order's effluent limit (see Table F-2) and similar toxicity could occur in the future.

Table F-9. Reasonable Potential Analysis No. 1 - Existing Conditions

Table 1 Pollutant	Most Stringent WQO (µg/L)	No. of Samples	No. of Non-Detects	Max Effluent Concentration (µg/L)	Max Effluent Concentration After Mixing (µg/L)	Projected 95th Percentile (µg/L)	Result
Objectives for Protection of Marine Aquatic Life							
Ammonia (as nitrogen)	600	30	0	54,000	360	400	Endpoint 2
Arsenic	8	83	83	<2.0	<3.0	---	Endpoint 2
Cadmium	1	83	76	1.2	0.0082	---	Endpoint 2

Table 1 Pollutant	Most Stringent WQO (µg/L)	No. of Samples	No. of Non-Detects	Max Effluent Concentration (µg/L)	Max Effluent Concentration After Mixing (µg/L)	Projected 95th Percentile (µg/L)	Result
Chlorinated Phenolics	1	7	7	<6.0	<0.040	---	Endpoint 3
Chromium (VI)	2	81	76	8.1	0.055	---	Endpoint 2
Acute Toxicity [1]	Not applicable						
Chronic Toxicity	**1 TUc**	**28**	**0**	**149 TUc**	**1.0 TUc**	**1.1 TUc**	**Endpoint 1**
Copper	3	83	0	26	2.2	2.1	Endpoint 2
Cyanide	1	28	25	8.2	0.055	---	Endpoint 2
Endosulfan (total)	0.009	7	7	<0.0062	<4.2E-5	---	Endpoint 3
Endrin	0.002	7	7	<0.0028	<1.9E-5	---	Endpoint 3
HCH	0.004	7	7	<0.0026	<1.7E-5	---	Endpoint 3
Lead	2	83	26	1.6	0.011	0.0090	Endpoint 2
Mercury	0.04	83	1	0.071	0.00097	0.000070	Endpoint 2
Nickel	5	83	0	27	0.18	0.033	Endpoint 2
Non-chlorinated Phenolics	30	7	6	1.2	0.0081	---	Endpoint 3
Radioactivity [2]	Not applicable						
Selenium	15	83	83	<2.0	<0.013	---	Endpoint 2
Silver	0.7	83	82	0.40	0.16	---	Endpoint 2
Total Chlorine Residual [3]	Not applicable						
Zinc	20	83	0	97	8.6	8.3	Endpoint 2
Objectives for Protection of Human Health – Noncarcinogens							
1,1,1-Trichloroethane	540,000	7	7	<0.24	<0.0016	---	Endpoint 3
2,4-Dinitrophenol	4.0	7	7	<0.90	<0.0060	---	Endpoint 3
2-Methyl-4,6-Dinitrophenol	220	7	7	<1.6	<0.010	---	Endpoint 3
Acrolein	220	7	7	<2.0	<0.013	---	Endpoint 3
Antimony	1,200	82	74	2.8	0.018	---	Endpoint 2
Bis(2-Chloroethoxy)Methane	4.4	7	7	<0.93	<0.0062	---	Endpoint 3
Bis(2-Chloroisopropyl)Ether	1,200	7	7	<0.81	<0.0054	---	Endpoint 3
Chlorobenzene	570	7	7	<0.25	<0.0017	---	Endpoint 3
Chromium (III) [4]	Not applicable						
Dichlorobenzenes	5,100	7	7	<3.0	<0.020	---	Endpoint 3
Diethyl Phthalate	33,000	7	7	<0.86	<0.0058	---	Endpoint 3
Dimethyl Phthalate	820,000	7	7	<0.97	<0.0065	---	Endpoint 3
Di-n-Butyl Phthalate	3,500	7	7	<0.91	<0.0061	---	Endpoint 3
Ethylbenzene	4,100	7	7	<1.0	<0.0067	---	Endpoint 3
Fluoranthene	15	8	8	<0.55	<0.0037	---	Endpoint 3
Hexachlorocyclopentadiene	58	7	7	<0.91	<0.0061	---	Endpoint 3
Nitrobenzene	4.9	7	7	<0.95	<0.0064	---	Endpoint 3
Thallium	2	82	82	<1.0	<0.0067	---	Endpoint 2
Toluene	85,000	7	7	<0.50	<0.0034	---	Endpoint 3
Tributyltin	0.0014	7	7	<0.0026	<1.7E-5	---	Endpoint 3
Objectives for Protection of Human Health – Carcinogens							
1,1,2,2-Tetrachloroethane	2.3	7	7	<0.68	<0.0045	---	Endpoint 3
1,1,2-Trichloroethane	9.4	7	7	<0.14	<0.00094	---	Endpoint 3
1,1-Dichloroethylene	0.9	7	7	<0.089	<0.00060	---	Endpoint 3
1,2-Dichloroethane	28	7	7	<0.15	<0.0010	---	Endpoint 3
1,2-Diphenylhydrazine	0.16	7	7	<0.90	<0.0060	---	Endpoint 3
1,3-Dichloropropylene	8.9	7	7	<0.24	<0.0016	---	Endpoint 3
1,4-Dichlorobenzene	18	7	7	<1.0	<0.0067	---	Endpoint 3

Table 1 Pollutant	Most Stringent WQO (µg/L)	No. of Samples	No. of Non-Detects	Max Effluent Concentration (µg/L)	Max Effluent Concentration After Mixing (µg/L)	Projected 95th Percentile (µg/L)	Result
TCDD Equivalents	3.9E-9	7	7	<2.6E-8	<1.7E-10	---	Endpoint 3
2,4,6-Trichlorophenol	0.29	7	7	<1.0	<0.0067	---	Endpoint 3
2,4-Dinitrotoluene	2.6	7	7	<0.96	<0.0064	---	Endpoint 3
3,3'-Dichlorobenzidine	0.0081	7	7	<5.0	<0.034	---	Endpoint 3
Acrylonitrile	0.10	7	7	<0.80	<0.0054	---	Endpoint 3
Aldrin	2.2E-5	7	7	<0.00075	<5.0E-6	---	Endpoint 3
Benzene	5.9	7	7	<0.20	<0.0013	---	Endpoint 3
Benzidine	6.9E-5	7	7	<5.0	<0.034	---	Endpoint 3
Beryllium	0.033	82	82	<0.50	<0.0034	---	Endpoint 2
Bis(2-Chloroethyl)Ether	0.045	7	7	<0.95	<0.0064	---	Endpoint 3
Bis(2-Ethylhexyl)Phthalate	3.5	7	2	3.3	0.022	---	Endpoint 3
Carbon Tetrachloride	0.90	7	7	<0.19	<0.0013	---	Endpoint 3
Chlordane	2.3E-5	7	7	<0.018	<0.00012	---	Endpoint 3
Chlorodibromomethane	8.6	7	7	<0.13	<0.00089	---	Endpoint 3
Chloroform	130	7	3	3.7	0.025	---	Endpoint 2
DDT (total)	0.00017	7	7	<2.1	<0.014	---	Endpoint 3
Dichlorobromomethane	6.2	7	7	<0.50	<0.0034	---	Endpoint 3
Dichloromethane	450	7	7	<0.50	<0.0034	---	Endpoint 3
Dieldrin	4.0E-5	7	7	<0.0013	<8.9E-6	---	Endpoint 3
Halomethanes	130	7	7	<0.69	<0.0046	---	Endpoint 3
Heptachlor	5E-5	7	7	<0.0013	<9.0E-6	---	Endpoint 3
Heptachlor Epoxide	2E-5	7	7	<0.00056	<3.8E-6	---	Endpoint 3
Hexachlorobenzene	0.00021	7	7	<0.91	<0.0061	---	Endpoint 3
Hexachlorobutadiene	14	7	7	<0.92	<0.0062	---	Endpoint 3
Hexachloroethane	2.5	7	7	<0.94	<0.0063	---	Endpoint 3
Isophorone	730	7	7	<0.93	<0.0062	---	Endpoint 3
N-Nitrosodimethylamine	7.3	7	7	<0.88	<0.0059	---	Endpoint 3
N-Nitrosodi-n-Propylamine	0.38	7	7	<0.97	<0.0065	---	Endpoint 3
N-Nitrosodiphenylamine	2.5	7	7	<0.83	<0.0056	---	Endpoint 3
PAHs (total)	0.0088	6	6	<1.2	<0.0081	---	Endpoint 3
PCBs	1.9E-5	7	7	<0.40	<0.0027	---	Endpoint 3
Tetrachloroethylene	2.0	7	7	<0.14	<0.0010	---	Endpoint 3
Toxaphene	0.00021	7	7	<0.058	<0.00039	---	Endpoint 3
Trichloroethylene	27	7	7	<0.38	<0.0025	---	Endpoint 3
Vinyl Chloride	36	7	7	<0.66	<0.0044	---	Endpoint 3

Abbreviations:

WQO = water quality objective
µg/L = micrograms per liter
TUc = chronic toxicity units

Footnotes:

[1] The previous order did not require acute toxicity monitoring.

[2] The previous order did not require monitoring for radioactivity.

[3] Chlorine is not added for disinfection, and the previous order did not require monitoring for residual chlorine.

[4] The previous order did not require monitoring for chromium (III); however, the maximum detected concentration of total chromium (8.1 µg/L) is less than the water quality objective for chromium (III) of 190,000 µg/L.

Table F-10. Reasonable Potential Analysis No. 2 - Westside Recycled Water Project Conditions

Table 1 Pollutant	Most Stringent WQO (µg/L)	No. of Samples	No. of Non-Detects	Max Effluent Concentration (µg/L)	Max Effluent Concentration After Mixing (µg/L)	Projected 95th Percentile (µg/L)	Result
Objectives for Protection of Marine Aquatic Life							
Ammonia (as nitrogen)	600	9	0	81,000	550	600	Endpoint 2
Arsenic	8	83	83	<3.0	<3.0	---	Endpoint 2
Cadmium	1	83	76	1.8	0.012	---	Endpoint 2
Chlorinated Phenolics	1	7	7	<9.0	<0.060	---	Endpoint 3
Chromium (VI)	2	81	76	12	0.082	---	Endpoint 2
Acute Toxicity [1]	Not applicable						
Chronic Toxicity [2]	**1 TUc**	28	**0**	**220 TUc**	**1.5 TUc**	**1.6 TUc**	**Endpoint 1**
Copper	3	83	0	39	2.2	2.2	Endpoint 2
Cyanide	1	28	25	12	0.082	---	Endpoint 3
Endosulfan (total)	0.009	7	7	<0.0093	<6.2E-5	---	Endpoint 3
Endrin	0.002	7	7	<0.0042	<2.8E-5	---	Endpoint 3
HCH	0.004	7	7	<0.0039	<2.6E-5	---	Endpoint 3
Lead	2	83	26	2.4	0.016	0.012	Endpoint 2
Mercury	0.04	83	1	0.11	0.0012	0.000074	Endpoint 2
Nickel	5	83	0	41	0.27	0.050	Endpoint 2
Non-chlorinated Phenolics	30	7	6	1.8	0.012	---	Endpoint 3
Radioactivity [3]	Not applicable						
Selenium	15	83	83	<3.0	<0.020	---	Endpoint 2
Silver	0.7	83	82	0.60	0.16	---	Endpoint 2
Total Chlorine Residual [4]	Not applicable						
Zinc	20	83	0	150	8.9	8.5	Endpoint 2
Objectives for Protection of Human Health – Noncarcinogens							
1,1,1-Trichloroethane	540,000	7	7	<0.35	<0.0024	---	Endpoint 3
2,4-Dinitrophenol	4.0	7	7	<1.4	<0.0091	---	Endpoint 3
2-Methyl-4,6-Dinitrophenol	220	7	7	<2.3	<0.016	---	Endpoint 3
Acrolein	220	7	7	<3.0	<0.020	---	Endpoint 3
Antimony	1,200	82	74	4.1	0.028	---	Endpoint 2
Bis(2-Chloroethoxy)Methane	4.4	7	7	<1.4	<0.0094	---	Endpoint 3
Bis(2-Chloroisopropyl)Ether	1,200	7	7	<1.2	<0.0082	---	Endpoint 3
Chlorobenzene	570	7	7	<0.37	<0.0025	---	Endpoint 3
Chromium (III) [5]	Not applicable						
Dichlorobenzenes	5,100	7	7	<4.5	<0.030	---	Endpoint 3
Diethyl Phthalate	33,000	7	7	<1.3	<0.087	---	Endpoint 3
Dimethyl Phthalate	820,000	7	7	<1.5	<0.0098	---	Endpoint 3
Di-n-Butyl Phthalate	3,500	7	7	<1.4	<0.0092	---	Endpoint 3
Ethylbenzene	4,100	7	7	<1.5	<0.010	---	Endpoint 3
Fluoranthene	15	8	8	<0.82	<0.0055	---	Endpoint 3
Hexachlorocyclopentadiene	58	7	7	<1.4	<0.0092	---	Endpoint 3
Nitrobenzene	4.9	7	7	<1.4	<0.0096	---	Endpoint 3
Thallium	2	82	82	<1.5	<0.010	---	Endpoint 2
Toluene	85,000	7	7	<0.42	<0.0028	---	Endpoint 3
Tributyltin	0.0014	7	7	<0.0039	<2.6E-5	---	Endpoint 3
Objectives for Protection of Human Health – Carcinogens							
1,1,2,2-Tetrachloroethane	2.3	7	7	<1.0	<0.0068	---	Endpoint 3
1,1,2-Trichloroethane	9.4	7	7	<0.21	<0.0014	---	Endpoint 3
1,1-Dichloroethylene	0.9	7	7	<0.13	<0.00090	---	Endpoint 3
1,2-Dichloroethane	28	7	7	<0.22	<0.0015	---	Endpoint 3

Table 1 Pollutant	Most Stringent WQO (µg/L)	No. of Samples	No. of Non-Detects	Max Effluent Concentration (µg/L)	Max Effluent Concentration After Mixing (µg/L)	Projected 95th Percentile (µg/L)	Result
1,2-Diphenylhydrazine	0.16	7	7	<1.4	<0.0091	---	Endpoint 3
1,3-Dichloropropylene	8.9	7	7	<0.36	<0.0024	---	Endpoint 3
1,4-Dichlorobenzene	18	7	7	<1.5	<0.010	---	Endpoint 3
TCDD Equivalents	3.9E-9	7	7	<0.95E-8	<6.4E-11	---	Endpoint 2
2,4,6-Trichlorophenol	0.29	7	7	<1.5	<0.010	---	Endpoint 3
2,4-Dinitrotoluene	2.6	7	7	<1.4	<0.0097	---	Endpoint 3
3,3'-Dichlorobenzidine	0.0081	7	7	<7.5	<0.050	---	Endpoint 3
Acrylonitrile	0.10	7	7	<1.2	<0.0081	---	Endpoint 3
Aldrin	2.2E-5	7	7	<0.0011	<7.6E-6	---	Endpoint 3
Benzene	5.9	7	7	<0.30	<0.0020	---	Endpoint 3
Benzidine	6.9E-5	7	7	<7.5	<0.050	---	Endpoint 3
Beryllium	0.033	82	82	<0.75	<0.0050	---	Endpoint 2
Bis(2-Chloroethyl)Ether	0.045	7	7	<1.4	<0.0096	---	Endpoint 3
Bis(2-Ethylhexyl)Phthalate	3.5	7	2	5.0	0.034	---	Endpoint 3
Carbon Tetrachloride	0.90	7	7	<0.29	<0.0020	---	Endpoint 3
Chlordane [13]	2.3E-5	7	7	<0.027	<0.00018	---	Endpoint 3
Chlorodibromomethane	8.6	7	7	<0.20	<0.0013	---	Endpoint 3
Chloroform	130	7	3	5.6	0.038	---	Endpoint 2
DDT (total)	0.00017	7	7	<3.12	<0.021	---	Endpoint 3
Dichlorobromomethane	6.2	7	7	<0.26	<0.0018	---	Endpoint 3
Dichloromethane	450	7	7	<0.75	<0.0050	---	Endpoint 3
Dieldrin	0.00004	7	7	<0.0020	<1.3E-5	---	Endpoint 3
Halomethanes	130	7	7	<1.0	<0.0070	---	Endpoint 3
Heptachlor	0.00005	7	7	<0.0013	<1.3E-5	---	Endpoint 3
Heptachlor Epoxide	0.00002	7	7	<0.00084	<5.6E-6	---	Endpoint 3
Hexachlorobenzene	0.00021	7	7	<1.4	<0.0092	---	Endpoint 3
Hexachlorobutadiene	14	7	7	<1.4	<0.0093	---	Endpoint 3
Hexachloroethane	2.5	7	7	<1.4	<0.0095	---	Endpoint 3
Isophorone	730	7	7	<1.4	<0.0094	---	Endpoint 3
N-Nitrosodimethylamine	7.3	7	7	<1.3	<0.0089	---	Endpoint 3
N-Nitrosodi-n-Propylamine	0.38	7	7	<1.5	<0.0098	---	Endpoint 3
N-Nitrosodiphenylamine	2.5	7	7	<1.2	<0.0084	---	Endpoint 3
PAHs (total)	0.0088	6	6	<1.8	<0.012	---	Endpoint 3
PCBs	1.9E-5	7	7	<0.59	<0.0040	---	Endpoint 3
Tetrachloroethylene	2.0	7	7	<0.21	<0.0014	---	Endpoint 3
Toxaphene	0.00021	7	7	<0.087	<0.00058	---	Endpoint 3
Trichloroethylene	27	7	7	<0.57	<0.0038	---	Endpoint 3
Vinyl Chloride	36	7	7	<0.98	<0.0066	---	Endpoint 3

Abbreviations:

WQO = water quality objective
µg/L = micrograms per liter

Footnotes:

[1] The previous order did not require monitoring for acute toxicity.

[2] The projection is particularly uncertain because chronic toxicity may occur as a result of various pollutants within the effluent and their toxic effects may not be linearly related to discharge concentrations.

[3] The previous order did not require monitoring for radioactivity.

[4] The previous order did not require monitoring for total residual chlorine.

[5] The previous order did not require monitoring for chromium (III); however, the maximum projected concentration of total chromium (12 µg/L) is less than the water quality objective for chromium (III) of 190,000 µg/L.

5. WQBELs

a. Dry Weather. For dry weather discharges from Discharge Point No. 001, the Ocean Plan calls for chronic toxicity WQBELs based on "toxic units" derived from multi-concentration toxicity tests. This Order introduces an updated approach. In 2010, U.S. EPA published the Test of Significant Toxicity (TST) statistical approach in *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document* (EPA 833-R-10-003, 2010). The TST statistical approach relies on the same U.S. EPA toxicity test methods. For example, section 9.4.1.2 of *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms* (EPA/600/R-95/0136, 1995) states, "the statistical methods recommended in this manual are not the only possible methods of statistical analysis."

To comply with the chronic toxicity WQBEL, effluent must "Pass" a single chronic toxicity test conducted at the IWC as defined in MRP section V.A.2 using the Test of Significant Toxicity (TST) statistical approach (Welch's t-test). The test result must reject the following null hypothesis:

H_0: mean discharge IWC response $\leq 0.75 \times$ mean control response.

In other words, the mean chronic toxicity response for a test sample must be statistically determined to be less than or equal to 75 percent of the response for a control sample. The 75 percent response level reflects a regulatory management decision intended to ensure that differences observed between test sample responses and control sample responses are meaningful. A test result that fails to reject the null hypothesis would not comply with the chronic toxicity WQBEL.

The chronic toxicity WQBEL is expressed as a single-sample maximum. For publicly-owned treatment works, 40 C.F.R. section 122.45(d) requires monthly and weekly effluent limitations unless impracticable. In this case, the single-sample WQBEL is necessary to protect against short-term effects. Limits expressed with monthly or weekly averaging periods could allow chronic toxicity to occur over shorter periods. This approach is comparable to that of the Ocean Plan, which calls for a daily maximum chronic toxicity limit. Single-sample and maximum daily chronic toxicity limits are comparable because chronic toxicity tests can take several days to complete, depending on the test species used. U.S. EPA recommends this approach in *EPA Regions 8, 9 and 10 Toxicity Training Tool* (January 2010).

b. Wet Weather. For wet weather discharges from Discharge Point No. 001 and the combined sewer discharge points, the Long-Term Control Plan required pursuant to the *Combined Sewer Overflow (CSO) Control Policy* and described in Provision VI.C.5.c of the Order serves as narrative WQBELs.

D. Discharge Requirement Considerations

1. Anti-Backsliding. This Order complies with the anti-backsliding provisions of CWA sections 402(o) and 303(d)(4) and 40 C.F.R. section 122.44(l), which generally require

effluent limitations in a reissued permit to be as stringent as those in the previous permit. The requirements of this Order are at least as stringent as those in the previous order, with the exception of mercury. This Order does not contain dry weather mercury effluent limitations because there is no longer reasonable potential to exceed water quality objectives based on mercury effluent data. Removing the mercury WQBELs is consistent with State Water Board Order No. WQ 2001-16. Consistent with State Water Board Order No. WQ 2001-06, reliance on the TST statistical approach to evaluate chronic toxicity for dry weather discharges from the Oceanside Water Pollution Control Plant is not backsliding because this Order's effluent limitation is not comparable to the effluent limitation in the previous order.

2. **Antidegradation.** This Order complies with the antidegradation provisions of 40 C.F.R. section 131.12 and State Water Board Resolution No. 68-16. It continues the status quo with respect to the level of discharge authorized in the previous order, which was adopted in accordance with antidegradation policies, and thus serves as the baseline by which to measure whether degradation will occur. This Order does not allow for a flow increase or a reduced level of treatment. The only potentially less stringent effluent limitation is the chronic toxicity WQBEL after Westside Recycled Water Project operations commence. The Westside Recycled Water Project is expected to concentrate, but not increase, existing pollutant loads; therefore, it will not degrade Pacific Ocean water quality.

3. **Stringency of Requirements for Individual Pollutants.** This Order contains both technology-based and water quality-based effluent limitations. This Order's technology-based requirements implement minimum, applicable federal technology-based requirements. This Order also contains more stringent effluent limitations as necessary to meet water quality standards. These limitations are no more stringent than the CWA requires.

   This Order's WQBELs have been derived to implement water quality objectives that protect beneficial uses. The beneficial uses and water quality objectives set forth in the Ocean Plan and Basin Plan have been approved pursuant to federal law and are federal water quality standards. U.S. EPA approved the Ocean Plan on February 14, 2006, and also approved subsequent amendments. Most Basin Plan beneficial uses and water quality objectives were approved under State law and submitted to and approved by U.S. EPA prior to May 30, 2000. Beneficial uses and water quality objectives submitted to U.S. EPA prior to May 30, 2000, but not approved by U.S. EPA before that date, are nonetheless "applicable water quality standards for purposes of the CWA" pursuant to 40 C.F.R. section 131.21(c)(1). U.S. EPA approved the remaining beneficial uses and water quality objectives implemented by this Order so they are applicable water quality standards pursuant to 40 C.F.R. section 131.21(c)(2).

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

This Order's receiving water limitations are based on Ocean Plan chapters II.C, II.D, and II.E, and State Water Board Order No. WQ 79-16. These limits are necessary to ensure compliance with applicable water quality standards in accordance with the CWA and regulations adopted thereunder.

VI. RATIONALE FOR PROVISIONS

A. Standard Provisions

Attachment D contains standard provisions that apply to all NPDES permits in accordance with 40 C.F.R. section 122.41 and additional conditions applicable to specific categories of permits in accordance with 40 C.F.R. section 122.42. The Discharger must comply with these provisions.

In accordance with 40 C.F.R. section 123.25(a)(12), permits may impose more stringent requirements. Attachment G contains standard provisions that supplement the federal standard provisions in Attachment D.

In addition to federal conditions that address enforcement authority specified in 40 C.F.R. sections 122.41(a)(2), 122.41(j)(5), and (k)(2), this Order incorporates Water Code section 13387(e) by reference.

B. Monitoring and Reporting Program (MRP) Requirements

CWA section 308 and 40 C.F.R. sections 122.41(h), 122.41(j)-(l), 122.44(i), and 122.48 require that NPDES permits specify monitoring and reporting requirements. Water Code sections 13267 and 13383 also authorize the Regional Water Board to establish monitoring, inspection, entry, reporting, and recordkeeping requirements. The Monitoring and Reporting Program (Attachment E) of this Order establishes monitoring, reporting, and recordkeeping requirements that implement federal and State requirements. For more background regarding these requirements, see Fact Sheet section VII.

C. Special Provisions

1. Reopener Provisions

These provisions are based on 40 C.F.R. sections 122.62 and 122.63 and allow modification of this Order and its effluent limitations as necessary in response to updated water quality objectives, regulations, or other new and relevant information that may become available in the future, and other circumstances as allowed by law. Provision VI.C.1.f is based on *Combined Sewer Overflow (CSO) Control Policy* section IV.B.2.g.

2. Effluent Characterization Study and Report

This Order does not include effluent limitations for Ocean Plan Table 1 pollutants that do not demonstrate reasonable potential, but this provision requires the Discharger to evaluate monitoring data to verify that the reasonable potential analysis conclusions of this Order remain valid. This requirement is authorized pursuant to 40 C.F.R. section 122.41(h) and Water Code section 13267, and is necessary to inform the next permit reissuance and to

ensure that the Discharger takes timely steps in response to any unanticipated change in effluent quality during the term of this Order.

3. Pollutant Minimization Program

This provision is based on *Combined Sewer Overflow (CSO) Control Policy* section II.B.7, Basin Plan section 4.13.2, Ocean Plan chapter III.C.9, State Water Board Order No. WQ 79-16, and Water Code section 13263. The provision requires the Discharger to include copper and zinc as pollutants of concern because concentrations are often elevated in combined sewer discharges.

4. Special Provisions for Publicly-Owned Treatment Works (POTWs)

a. Sludge and Biosolids Management. This provision is based on Basin Plan section 4.17. "Sludge" refers to the solid, semisolid, and liquid residue removed during primary, secondary, and advanced wastewater treatment processes. "Biosolids" refers to sludge that has been treated and may be beneficially reused.

b. Pretreatment Program. This provision is based on 40 C.F.R. part 403. The Discharger implements a pretreatment program due to the nature and volume of its industrial influent. This provision lists the Discharger's responsibilities regarding its pretreatment program and requires compliance with the provisions in Attachment H.

c. Anaerobically-Digestible Material. Standard Operating Procedures are required for dischargers that accept hauled waste food, fats, oil, and grease for injection into anaerobic digesters. The development and implementation of Standard Operating Procedures for management of these materials is intended to allow the California Department of Resources Recycling and Recovery to exempt operations from separate and redundant permitting programs. If the Discharger does not accept fats, oil, and grease for resource recovery purposes, it is not required to develop and implement Standard Operating Procedures.

Some publicly-owned treatment works choose to accept organic material, such as waste food, fats, oils, and grease, into their anaerobic digesters to increase production of methane and other biogases for energy production and to prevent such materials from being discharged into the collection system and potentially causing sanitary sewer overflows. The California Department of Resources Recycling and Recovery has proposed to exclude publicly-owned treatment works from Process Facility/Transfer Station permit requirements when the same activities are regulated under waste discharge requirements or NPDES permits. The proposed exclusion is restricted to anaerobically-digestible materials that have been prescreened, slurried, processed, and conveyed in a closed system for co-digestion with regular sewage sludge. The exclusion assumes that the facility has developed Standard Operating Procedures for proper handling, processing, tracking, and management.

d. Separate Sanitary Sewer System. This provision requires compliance with Attachments D and G and states that these requirements may be satisfied by complying

with State Water Board Order No. 2006-0003-DWQ, Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, as amended by State Water Board Order No. WQ 2013-0058-EXEC and any subsequent order updating these requirements. These statewide WDRs require public agencies that own or operate sanitary sewer systems with greater than one mile of sewer lines to enroll for coverage and comply with requirements to develop sanitary sewer management plans and report sanitary sewer overflows, among other provisions and prohibitions. The statewide WDRs contain requirements for operation and maintenance of collection systems, and for reporting and mitigating sanitary sewer overflows, that are more extensive and, therefore, more stringent than the standard provisions in Attachments D and G.

5. Combined Sewer System Controls

a. Nine Minimum Controls. The *Combined Sewer Overflow (CSO) Control Policy* establishes nine minimum controls as the minimum technology-based requirements during wet weather for combined sewer systems based on 40 C.F.R. section 125.3:

- Conduct Proper Operations and Maintenance Program
- Maximize Use of Collection System for Storage
- Review and Modify Pretreatment Program
- Maximize Flow to Treatment Plant
- Prohibit Dry Weather Combined Sewer Overflows
- Control Solid and Floatable Materials in Combined Sewer Discharges
- Develop and Implement Pollution Prevention Program
- Notify Public of Combined Sewer Discharges
- Monitor to Characterize Combined Sewer Discharge Impacts and Efficacy of Controls

These nine minimum controls are the best conventional pollutant control technology (BCT) and the best available technology economically achievable (BAT). Provision VI.C.5.a of this Order requires implementation of these nine minimum controls and is consistent with U.S. EPA's guidance document, *Combined Sewer Overflows, Guidance for Nine Minimum Controls* (EPA 832-B-95-003, May 1995).

Provision VI.C.5.a.viii(a) contains specific signage and reporting requirements to inform the public of the location, occurrence, and possible health impacts of combined sewer discharges. The required signage language includes a telephone number so the public can report dry weather discharges to help ensure that corrective actions are taken and warning language to reduce public exposure to potential health risks. This provision contains requirements to protect the shellfish harvesting beneficial use in the Pacific Ocean (see Fact Sheet sections III.C.1 and III.C.2). This provision is consistent with State Water Board Order No. 79-16, U.S. EPA's *NPDES Compendium of Next Generation Compliance Examples* (September 2016), and 40 C.F.R. section 122.38 (*Public Notification Requirements for Combined Sewer Overflows to the Great Lakes Basin*, considered here as guidance).

For sewer overflows from the combined sewer system, Provision VI.C.5.a.ii(b) requires the Discharger to notify and report sewer overflows from the combined sewer system using the State's CIWQS database. Water Code sections 13267 and 13383, 40 C.F.R. section 122.41(h), and the *Combined Sewer Overflow (CSO) Control Policy* authorize the Regional Water Board and U.S. EPA to require information about releases of untreated or partially-treated wastewater. This information is necessary to evaluate combined sewer system performance, and operations and maintenance practices; to determine whether any diversions of untreated or partially-treated wastewater result in a discharge to surface waters; to satisfy public notification requirements; to identify whether the public could be affected; and to establish whether sewer overflows from the combined sewer system result in a nuisance as defined by Water Code section 13050.

b. Documentation of Nine Minimum Controls. Provision VI.C.5.b is based on section II.B of the *Combined Sewer Overflow (CSO) Control Policy*, which states that Dischargers should submit appropriate documentation demonstrating implementation of the nine minimum controls. Consistent with U.S. EPA's guidance document, *Combined Sewer Overflows, Guidance for Nine Minimum Controls* (EPA 832-B-95-003, May 1995), a community that has made substantial progress in implementing the nine minimum controls is still expected to provide documentation to the permitting authority to demonstrate how its program addresses each minimum control.

c. Long-Term Control Plan (LTCP). The *Combined Sewer Overflow (CSO) Control Policy* requires implementation of a Long-Term Control Plan (LTCP) to satisfy water quality-based requirements during wet weather. *Combined Sewer Overflow (CSO) Control Policy* section IV.B.2.f specifies that permits should contain requirements for maximizing the treatment of wet weather flows, as appropriate. The operational requirements in Provision VI.C.5.c of this Order are unchanged from the previous order, except that this Order requires the instantaneous influent flow rate to the Oceanside Water Pollution Control Plant prior to initiating discharge from the Westside Transport/Storage Structure to Discharge Point No. 001 to be 60 MGD to reflect the treatment capacity of the Oceanside Water Pollution Control Plant and operational considerations. This provision allows the Discharger to request changes to these operational parameters to ensure the Discharger's LTCP continues to minimize combined sewer discharges and maximize pollutant removal during wet weather.
Provision VI.C.5.d (Task 4) of this Order requires the Discharger to re-evaluate each operational requirement and propose additional performance measures within 24 months of this Order's effective date to ensure wet weather operations are optimized based on current information.

d. LTCP Update. The Discharger's report *San Francisco Wastewater Long Term Control Plan Synthesis* (March 30, 2018) summarizes the various documents that comprise the Discharger's historical planning process and LTCP. Provision VI.C.5.d requires the Discharger to update its LTCP with respect to the elements listed in *Combined Sewer Overflow (CSO) Control Policy* section II.C. *Combined Sewer Overflow (CSO) Control Policy* section IV.B describes the major elements that should be included in NPDES permits to implement the policy and ensure protection of water quality. This provision is consistent with U.S. EPA's guidance document *Combined Sewer Overflows, Guidance*

for Long-Term Control Plan (EPA 832-B-95-002, September 1995). This provision also implements State Water Board Order No. WQ 79-16, which sets forth specific conditions to be implemented during wet weather (see Fact Sheet § III.C.2.b).

This provision requires the Discharger to update its LTCP for the following reasons:

- *Combined Sewer Overflow (CSO) Control Policy* section IV.B.2.b specifies that the permit should contain narrative requirements to ensure that selected controls are implemented, operated, and maintained as described in the Discharger's LTCP.

- *Combined Sewer Overflow (CSO) Control Policy* section IV.B.2.d specifies that the permit should contain a requirement to monitor and collect sufficient information to demonstrate compliance with water quality standards and protect designated uses, as well as to determine the effectiveness of combined sewer system controls.

- *Combined Sewer Overflow (CSO) Control Policy* section IV.B.2.e specifies that the permit should contain a requirement to reassess combined sewer discharges to sensitive areas in those cases where elimination or relocation was previously found to be not physically possible and economically achievable.

- *Combined Sewer Overflow (CSO) Control Policy* section IV.B.2.f specifies that the permit should contain requirements for maximizing the treatment of wet weather flows at the treatment plant, as appropriate.

- State Water Board Order No. WQ 79-16 requires the Discharger to design, construct, and operate facilities to the greatest extent practical to conform to the standards set forth in chapter II of the 1978 Ocean Plan, except for the bacteriological standards (see Fact Sheet § III.C.2.b).

- State Water Board Order No. WQ 79-16 requires the Discharger to design, construct, and operate facilities to the greatest extent practical to comply with the conditions controlled by the requirements set forth in chapter III, sections A and B, of the 1978 Ocean Plan (see Fact Sheet § III.C.2.b).

- An updated LTCP is necessary to document that the Discharger's LTCP is based on the most current information to assess whether water quality standards are being met and that wet weather discharges are not causing unreasonable degradation of the marine environment (40 C.F.R. § 125.122).

6. Westside Recycled Water Project Operations Notification

The effluent limitations and specifications in this Order are based on information available during the permit reissuance process. Assumptions regarding how effluent quality could change after commencement of Westside Recycled Water Project operations were based on information the Discharger provided prior to completion of project planning and construction. This provision is necessary to evaluate whether the assumptions made during the permitting process remain valid and to ensure that the permit continues to be protective of water quality standards. Moreover, because some requirements of this Order are contingent

upon Westside Recycled Water Project operations, notification is necessary for the Regional Water Board and U.S. EPA to know when such requirements apply.

7. Flame Retardant Special Study

This special study is necessary to evaluate the potential impacts of flame retardants (i.e., polybrominated diphenyl ethers and chlorinated organophosphate flame retardants) in receiving waters. During U.S. EPA consultation with the National Marine Fisheries Service pursuant to the Endangered Species Act and Magnuson-Stevens Act, the National Marine Fisheries Service expressed concern about the presence of flame retardants in plant effluent and flame retardant mass loadings to the Pacific Ocean because organophosphates have been widely detected in San Francisco Bay water, sediment, and aquatic life tissue, and because polybrominated diphenyl ether (PBDE) and tris(1,3-dichloro-2-propyl)phosphate (TDCP) concentrations in San Francisco Bay water have regularly exceeded predicted no effect concentrations for marine settings (*U.S. EPA Biological Evaluation,* April 2019). This special study is consistent with other NPDES permits that authorize discharge to the Pacific Ocean.

8. Efficacy of Combined Sewer System Controls Special Study

This special study is necessary to characterize the quality of the combined sewer discharges and the efficacy of the combined sewer system controls during wet weather. It is based on the *Combined Sewer Overflow (CSO) Control Policy*, which requires "a post-construction water quality monitoring program adequate to verify compliance with water quality standards and protection of designated uses as well as to ascertain the effectiveness of CSO controls."

VII. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

CWA section 308 and 40 C.F.R. sections 122.41(h), 122.41(j)-(l), 122.44(i), and 122.48 require that all NPDES permits specify monitoring and reporting requirements. Water Code sections 13267 and 13383 also authorize the Regional Water Board to establish monitoring, inspection, entry, reporting, and recordkeeping requirements. The *Combined Sewer Overflow (CSO) Control Policy* requires monitoring to ascertain the effectiveness of controls and to verify compliance with water quality standards and protection of beneficial uses. The Monitoring and Reporting Program (MRP) in Attachment E of this Order establishes monitoring, reporting, and recordkeeping requirements that implement federal and State requirements. Specified monitoring frequencies take into account the quantity and variability of the discharge, past compliance, significance of pollutants, and cost of monitoring. The following provides the rationale for the monitoring and reporting requirements contained in the MRP.

A. Influent Monitoring. Influent flow monitoring is necessary to understand Facility operations and to evaluate compliance with Discharge Prohibition III.D. Influent $CBOD_5$ and TSS monitoring is necessary to evaluate compliance with this Order's 85 percent removal requirement. Influent monitoring is also necessary to identify wet weather days, as defined in Attachment A.

B. Effluent Monitoring. Dry weather monitoring is necessary to evaluate compliance with this Order's effluent limitations and to provide data for future reasonable potential analyses. Wet weather monitoring is necessary to characterize the efficacy of combined sewer system controls and assess receiving water impacts. Effluent flow monitoring is necessary to understand Facility operations and to assess impacts to receiving waters.

C. Toxicity Testing. Dry weather effluent chronic toxicity monitoring is necessary to evaluate compliance with this Order's chronic toxicity effluent limitation and to provide data for future reasonable potential analyses. Routine and accelerated chronic toxicity monitoring frequencies and Toxicity Reduction Evaluation requirements are based on the implementation provisions in Ocean Plan chapter III.C and the standard monitoring procedures guidance in section 7.1 of Ocean Plan Appendix III.

A tiered approach to determine the required effluent concentration in test samples removes impediments for the Discharger to construct and operate the Westside Recycled Water Project. When recycled water production exceeds 1.0 MGD, toxicity test samples are to contain an effluent concentration based on the dilution at Discharge Point No. 001 as modeled using observed ocean currents. This flexibility accounts for potential increases in pollutant concentrations as recycled water is removed from the discharge.

D. Receiving Water Monitoring. Receiving water monitoring is necessary to characterize the effects of the discharges authorized in this Order on the receiving water and species listed under the California Endangered Species Act or federal Endangered Species Act. The requirements are based on the monitoring guidance in Appendix III of the Ocean Plan. The MRP requires the Discharger to continue its Southwest Ocean Outfall Regional Monitoring Program to collect data on chemical and physical sediment quality, benthic infauna community structure, and physical anomalies and bioaccumulation of contaminants in organism tissues.

The MRP requires shoreline monitoring following combined sewer discharge events at beach locations where water contact recreation takes place. This monitoring is necessary to assess the possible effects of combined sewer discharges on the water contact recreation beneficial use and to establish when public notification is required pursuant to Provision VI.C.5.a.viii of this Order. The bacteria indicators, *Enterococcus* and fecal coliform, are consistent with the revised bacteria provisions approved by U.S. EPA on March 22, 2019. An additional bacteria indicator, total coliform, is required for shoreline monitoring following combined sewer discharges because monitoring for total coliform is consistent with the indicators identified by the California Department of Public Health.

The MRP no longer requires the Discharger to collect data on demersal fish and epibenthic invertebrate community structure because trawl sampling does not provide data that are useful in determining discharge effects (*Southwest Ocean Outfall Regional Monitoring Program 1997-2012 Summary Report,* April 2014). The MRP also no longer includes 12 offshore receiving water monitoring locations. Seven discontinued locations (Stations 73, 74, 75, 76, 77, 78, and 79) were part of a special study conducted from 2002 through 2016; the Discharger demonstrated that these locations are not significantly different from other reference monitoring locations (*A Review of Benthic Macrofaunal Assemblage and Sediment Conditions in the Reef-Effect Region of the SWOO-RMP,* August 2018). Sediment and infaunal sampling at the other

five discontinued locations (Stations 41, 42, 44, 46, 49) has historically provided very little information because of their location in a unique, high energy environment with little to no fine sediment or animals (Pang, Jennie, email communication, December 14, 2018).

E. Pretreatment and Biosolids Monitoring. The pretreatment and biosolids monitoring requirements for influent, effluent, and biosolids are necessary to evaluate compliance with the Discharger's U.S. EPA-approved pretreatment program. Biosolids monitoring is also required pursuant to 40 C.F.R. part 503.

F. Other Monitoring Requirements. Pursuant to CWA section 308, U.S. EPA requires dischargers to participate in a Discharge Monitoring Report-Quality Assurance (DMR-QA) Study Program. The program annually evaluates the analytical abilities of laboratories that perform or support NPDES permit-required monitoring. The program applies to discharger laboratories and contract laboratories. There are two options to comply: (1) dischargers can obtain and analyze DMR-QA samples, or (2) pursuant to a waiver U.S. EPA issued to the State Water Board, dischargers can submit results from the most recent Water Pollution Performance Evaluation Study. Dischargers must submit results annually to the State Water Board, which then forwards the results to U.S. EPA.

Recycled water monitoring and reporting requirements are required to be incorporated into this Order by State Water Board Order No. WQ 2019-0037-EXEC (Amending Monitoring and Reporting Programs for Waste Discharge Requirements, NPDES Permits, Water Reclamation Requirements, Master Recycling Permits, and General Waste Discharge Requirements) issued on July 24, 2019, pursuant to Water Code sections 13267 and 13383.

VIII. PUBLIC PARTICIPATION

The Regional Water Board and U.S. EPA considered the issuance of WDRs and an NPDES permit for the Facility. As a step this process, U.S. EPA and Regional Water Board staff developed a tentative order and encouraged public participation in the reissuance process.

A. Notification of Interested Parties. The Regional Water Board and U.S. EPA notified the Discharger and interested agencies and persons of their intent to adopt an order reissuing the NPDES permit for the Discharger's discharges and provided an opportunity to submit written comments and recommendations. Notification was provided through the *San Francisco Chronicle* and http://www.epa.gov/region9/water/npdes/pubnotices.html. The public had access to the Regional Water Board agenda and any changes in dates and locations through the Regional Water Board's website at http://www.waterboards.ca.gov/sanfranciscobay and U.S. EPA's website at http://www.epa.gov/region9/water/npdes/pubnotices.html.

B. Written Comments. Interested persons were invited to submit written comments concerning the tentative order as explained through the notification process. Comments to the Regional Water Board and U.S. EPA were to be submitted either in person or by mail to the U.S. EPA NPDES Permits Office (WTR 2-3) at 75 Hawthorne Street, San Francisco, California 94105, to the attention of Becky Mitschele, and to the Regional Water Board office at 1515 Clay Street, Suite 1400, Oakland, California 94612, to the attention of Jessica Watkins.

For full staff response and Regional Water Board and U.S. EPA consideration, the written comments were due by 5:00 p.m. on May 20, 2019.

C. Public Hearing. The Regional Water Board held a public hearing on the tentative order during its regular meeting at the following date and time, and at the following location:

Date:	Wednesday, September 11, 2019
Time:	9:00 a.m.
Location:	Elihu Harris State Office Building 1515 Clay Street, 1st Floor Auditorium Oakland, CA 94612
Contact:	Jessica Watkins, (510) 622-2349, jessica.watkins@waterboards.ca.gov

Interested persons were invited to attend. At the public hearing, the Regional Water Board heard testimony pertinent to the discharge, WDRs, and permit. For accuracy of the record, important testimony was requested to be in writing.

Dates and venues change. The Regional Water Board web address is http://www.waterboards.ca.gov/sanfranciscobay, where one could access the current agenda for changes in dates and locations.

D. Reconsideration of Waste Discharge Requirements. Any aggrieved person may petition the State Water Board to review the Regional Water Board decision regarding the final WDRs. The State Water Board must receive the petition at the following address within 30 calendar days of the Regional Water Board's action:

State Water Resources Control Board
Office of Chief Counsel
P.O. Box 100, 1001 I Street
Sacramento, CA 95812-0100

For instructions on how to file a petition for review, see http://www.waterboards.ca.gov/public_notices/petitions/water_quality/wqpetition_instr.shtml.

E. Federal NPDES Permit Appeals. When U.S. EPA issues a final NPDES permit, it becomes effective on its effective date unless a request for review is filed. If a request for review is filed, only those permit conditions that are uncontested go into effect pending disposition of the request for review. Requests for review must be filed within 33 days following the date the final permit is mailed and must meet the requirements of 40 C.F.R. section 124.19. Requests for review should be addressed to the Environmental Appeals Board and sent through the U.S. Postal Service addressed to the Environmental Appeals Board's mailing address:

U.S. Environmental Protection Agency
Clerk of the Board
Environmental Appeals Board (MC 1103B)
Ariel Rios Building
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460-0001

Alternatively, filings delivered by hand or courier, including Federal Express, UPS, and U.S. Postal Express Mail, should be directed to the following address:

Environmental Appeals Board
U.S. Environmental Protection Agency
Colorado Building
1341 G Street, N.W., Suite 600
Washington, D.C. 20460

Persons filing a request for review must have filed written comments on the draft permit. Otherwise, any such request for review may be filed only to the extent that the request pertains to changes from the draft to the final permit decision.

F. Information and Copying. The Report of Waste Discharge, related supporting documents, and comments received are on file and may be inspected at the Regional Water Board office at 1515 Clay Street, Suite 1400, Oakland, California at any time between 8:00 a.m. and 5:00 p.m. (except noon to 1:00 p.m.), Monday through Friday, and at the U.S. EPA Region IX office at 75 Hawthorne Street, San Francisco, California at any time between 9:00 a.m. and 5:00 p.m., Monday through Friday. Copying of documents may be arranged by calling the Regional Water Board at (510) 622-2300 or U.S. EPA at (415) 972-3524.

G. Register of Interested Persons. Any person interested in being placed on the mailing list for information regarding the WDRs and NPDES permit should contact the Regional Water Board and U.S. EPA, reference this Facility, and provide a name, address, and phone number.

H. Additional Information. Requests for additional information or questions regarding this Order should be directed to Jessica Watkins at (510) 622-2349 or jessica.watkins@waterboards.ca.gov, or Becky Mitschele at (415) 972-3492 or mitschele.becky@epa.gov.

ATTACHMENT G

REGIONAL STANDARD PROVISIONS, AND MONITORING AND REPORTING REQUIREMENTS (SUPPLEMENT TO ATTACHMENT D)

November 2017

Contents

REGIONAL STANDARD PROVISIONS, AND MONITORING AND REPORTING REQUIREMENTS

APPLICABILITY

This document supplements the requirements of Federal Standard Provisions (Attachment D). For clarity, these provisions are arranged using to the same headings as those used in Attachment D.

I. STANDARD PROVISIONS - PERMIT COMPLIANCE

A. Duty to Comply – Not Supplemented

B. Need to Halt or Reduce Activity Not a Defense – Not Supplemented

C. Duty to Mitigate – Supplement to Attachment D, Provision I.C.

1. **Contingency Plan**. The Discharger shall maintain a Contingency Plan as prudent in accordance with current facility emergency planning. The Contingency Plan shall describe procedures to ensure that existing facilities remain in, or are rapidly returned to, operation in the event of a process failure or emergency incident, such as employee strike, strike by suppliers of chemicals or maintenance services, power outage, vandalism, earthquake, or fire. The Discharger may combine the Contingency Plan and Spill Prevention Plan (see Provision I.C.2, below) into one document. In accordance with Regional Water Board Resolution No. 74-10, discharge in violation of the permit where the Discharger has failed to develop and implement a Contingency Plan as described below may be the basis for considering the discharge a willful and negligent violation of the permit pursuant to California Water Code section 13387. The Contingency Plan shall, at a minimum, provide for the following:

   a. Sufficient personnel for continued facility operation and maintenance during employee strikes or strikes against contractors providing services;

   b. Maintenance of adequate chemicals or other supplies, and spare parts necessary for continued facility operations;

   c. Emergency standby power;

   d. Protection against vandalism;

   e. Expeditious action to repair failures of, or damage to, equipment, including any sewer lines;

   f. Reporting of spills and discharges of untreated or inadequately treated wastes, including measures taken to clean up the effects of such discharges; and

   g. Maintenance, replacement, and surveillance of physical condition of equipment and facilities, including any sewer lines.

2. **Spill Prevention Plan.** The Discharger shall maintain a Spill Prevention Plan to prevent accidental discharges and to minimize the effects of any such discharges. The Spill Prevention Plan shall do the following:

   a. Identify the possible sources of accidental discharge, untreated or partially-treated waste bypass, and polluted drainage;

   b. State when current facilities and procedures became operational and evaluate their effectiveness; and

   c. Predict the effectiveness of any proposed facilities and procedures and provide an implementation schedule with interim and final dates when the proposed facilities and procedures will be constructed, implemented, or operational.

D. Proper Operation and Maintenance – Supplement to Attachment D, Provision I.D

1. **Operation and Maintenance Manual.** The Discharger shall maintain an Operation and Maintenance Manual to provide the plant and regulatory personnel with a source of information describing all equipment, recommended operational strategies, process control monitoring, and maintenance activities. To remain a useful and relevant document, the Operation and Maintenance Manual shall be kept updated to reflect significant changes in treatment facility equipment and operational practices. The Operation and Maintenance Manual shall be maintained in usable condition and be available for reference and use by all relevant personnel and Regional Water Board staff.

2. **Wastewater Facilities Status Report.** The Discharger shall maintain a Wastewater Facilities Status Report and regularly review, revise, or update it, as necessary. This report shall document how the Discharger operates and maintains its wastewater collection, treatment, and disposal facilities to ensure that all facilities are adequately staffed, supervised, financed, operated, maintained, repaired, and upgraded as necessary to provide adequate and reliable transport, treatment, and disposal of all wastewater from both existing and planned future wastewater sources under the Discharger's service responsibilities.

3. **Proper Supervision and Operation of Publicly-Owned Treatment Works (POTWs).** POTWs shall be supervised and operated by persons possessing certificates of appropriate grade pursuant to Title 23, section 3680, of the California Code of Regulations.

E. Property Rights – Not Supplemented

F. Inspection and Entry – Not Supplemented

G. Bypass – Not Supplemented

H. Upset – Not Supplemented

I. Other – Addition to Attachment D

1. Neither the treatment nor the discharge of pollutants shall create pollution, contamination, or nuisance as defined by California Water Code section 13050.

2. Collection, treatment, storage, and disposal systems shall be operated in a manner that precludes public contact with wastewater. If public contact with wastewater could reasonably occur on public property, warning signs shall be posted.

3. If the Discharger submits a timely and complete Report of Waste Discharge for permit reissuance, this permit shall continue in force and effect until the permit is reissued or the Regional Water Board rescinds the permit.

II. STANDARD PROVISIONS – PERMIT ACTION – Not Supplemented

III. STANDARD PROVISIONS – MONITORING

A. Sampling and Analyses – Supplement to Attachment D, Provisions III.A and III.B

1. Certified Laboratories. Water and waste analyses shall be performed by a laboratory certified for these analyses in accordance with California Water Code section 13176.

2. Minimum Levels. For the 126 priority pollutants, the Discharger should use the analytical methods listed in Table B unless the Monitoring and Reporting Program (MRP, Attachment E) requires a particular method or minimum level (ML). All monitoring instruments and equipment shall be properly calibrated and maintained to ensure accuracy of measurements.

3. Monitoring Frequency. The MRP specifies the minimum sampling and analysis schedule.

a. Sample Collection Timing

i. The Discharger shall collect influent samples on varying days selected at random and shall not include any plant recirculation or other sidestream wastes, unless otherwise stipulated in the MRP. The Executive Officer may approve an alternative influent sampling plan if it is representative of plant influent and complies with all other permit requirements.

ii. The Discharger shall collect effluent samples on days coincident with influent sampling, unless otherwise stipulated by the MRP. If influent sampling is not required, the Discharger shall collect effluent samples on varying days selected at random, unless otherwise stipulated in the MRP. The Executive Officer may approve an alternative effluent sampling plan if it is representative of plant discharge and in compliance with all other permit requirements.

iii. The Discharger shall collect effluent grab samples during periods of daytime maximum peak flows (or peak flows through secondary treatment units for facilities that recycle effluent).

iv. Effluent sampling for conventional pollutants shall occur on at least one day of any multiple-day bioassay the MRP requires. During the course of the bioassay, on at least one day, the Discharger shall collect and retain samples of the discharge. In the event that a bioassay result does not comply with effluent limitations, the Discharger

shall analyze the retained samples for pollutants that could be toxic to aquatic life and for which it has effluent limitations.

(a) The Discharger shall perform bioassays on final effluent samples; when chlorine is used for disinfection, bioassays shall be performed on effluent after chlorination and dechlorination; and

(b) The Discharger shall analyze for total ammonia nitrogen and calculate the amount of un-ionized ammonia whenever test results fail to meet effluent limitations.

b. Conditions Triggering Accelerated Monitoring

i. Average Monthly Effluent Limitation Exceedance. If the results from two consecutive samples of a constituent monitored in a particular month exceed the average monthly effluent limitation for any parameter (or if the required sampling frequency is once per month or less and the monthly sample exceeds the average monthly effluent limitation), the Discharger shall, within 24 hours after the results are received, increase its sampling frequency to daily until the results from the additional sampling show that the parameter complies with the average monthly effluent limitation.

ii. Maximum Daily Effluent Limitation Exceedance. If a sample result exceeds a maximum daily effluent limitation, the Discharger shall, within 24 hours after the result is received, increase its sampling frequency to daily until the results from two samples collected on consecutive days show compliance with the maximum daily effluent limitation.

iii. Acute Toxicity. If final or intermediate results of an acute bioassay indicate a violation or threatened violation (e.g., the percentage of surviving test organisms of any single acute bioassay is less than 70 percent), the Discharger shall initiate a new test as soon as practical or as described in applicable State Water Board plan provisions that become effective after adoption of these Regional Standard Provisions. The Discharger shall investigate the cause of the mortalities and report its findings in the next self-monitoring report.

iv. Chlorine. The Discharger shall calibrate chlorine residual analyzers against grab samples as frequently as necessary to maintain accurate control and reliable operation. If an effluent violation is detected, the Discharger shall collect grab samples at least every 30 minutes until compliance with the limitation is achieved, unless the Discharger monitors chlorine residual continuously. In such cases, the Discharger shall continue to conduct continuous monitoring.

v. Bypass. Except as indicated below, if a Discharger bypasses any portion of its treatment facility, it shall monitor flows and collect samples at affected discharge points and analyze samples for all constituents with effluent limitations on a daily basis for the duration of the bypass. The Discharger need not accelerate chronic toxicity monitoring. The Discharger also need not collect and analyze samples for mercury, dioxin-TEQ, and PCBs after the first day of the bypass. The Discharger may

satisfy the accelerated acute toxicity monitoring requirement by conducting a flow-through test or static renewal test that captures the duration of the bypass (regardless of the method specified in the MRP). If bypassing disinfection units only, the Discharger shall only monitor bacteria indicators daily.

(a) Bypass for Essential Maintenance. If a Discharger bypasses a treatment unit for essential maintenance pursuant to Attachment D section I.G.2, the Executive Officer may reduce the accelerated monitoring requirements above if the Discharger (i) monitors effluent at affected discharge points on the first day of the bypass for all constituents with effluent limitations, except chronic toxicity; and (ii) identifies and implements measures to ensure that the bypass will continue to comply with effluent limitations.

(b) Approved Wet Weather Bypasses. If a Discharger bypasses a treatment unit or permitted outfall during wet weather with Executive Officer approval pursuant to Attachment D section I.G.4, the Discharger shall monitor flows and collect and retain samples for affected discharge points on a daily basis for the duration of the bypass. The Discharger shall analyze daily for TSS using 24-hour composites (or more frequent increments) and for bacteria indicators with effluent limitations using grab samples. If TSS exceeds 45 mg/L in any composite sample, the Discharger shall also analyze daily the retained samples for all other constituents with effluent limitations, except oil and grease, mercury, PCBs, dioxin-TEQ, and acute and chronic toxicity. Additionally, at least once each year, the Discharger shall analyze the retained samples for one approved bypass for all other constituents with effluent limitations, except oil and grease, mercury, PCBs, dioxin-TEQ, and acute and chronic toxicity. This monitoring shall be in addition to the minimum monitoring specified in the MRP.

B. Standard Observations – Addition to Attachment D

1. **Receiving Water Observations.** The following requirements only apply when the MRP requires standard observations of receiving waters. Standard observations shall include the following:

   a. Floating and Suspended Materials (e.g., oil, grease, algae, and other macroscopic particulate matter) **—** presence or absence, source, and size of affected area.

   b. Discoloration and Turbidity — color, source, and size of affected area.

   c. Odor — presence or absence, characterization, source, and distance of travel.

   d. Beneficial Water Use — estimated number of water-associated waterfowl or wildlife, fisherpeople, and other recreational activities.

   e. Hydrographic Condition — time and height of high and low tides (corrected to nearest National Oceanic and Atmospheric Administration location for the sampling date and time).

f. Weather Conditions — wind direction, air temperature, and total precipitation during five days prior to observation.

2. **Wastewater Effluent Observations.** The following requirements only apply when the MRP requires standard observations of wastewater effluent. Standard observations shall include the following:

   a. Floating and Suspended Material of Wastewater Origin (e.g., oil, grease, algae, and other macroscopic particulate matter) **—** presence or absence.

   b. Odor — presence or absence, characterization, source, distance of travel, and wind direction.

3. **Beach and Shoreline Observations.** The following requirements only apply when the MRP requires standard observations of beaches or shorelines. Standard observations shall include the following:

   a. Material of Wastewater Origin — presence or absence, description of material, estimated size of affected area, and source.

   b. Beneficial Use — estimate of number of people participating in recreational water contact, non-water contact, and fishing activities.

4. **Waste Treatment and/or Disposal Facility Periphery Observations.** The following requirements only apply when the MRP requires standard observations of the periphery of waste treatment or disposal facilities. Standard observations shall include the following:

   a. Odor — presence or absence, characterization, source, and distance of travel.

   b. Weather Conditions — wind direction and estimated velocity.

IV. STANDARD PROVISIONS – RECORDS

A. Records to be Maintained – Supplement to Attachment D, Provision IV.A

The Discharger shall maintain records in a manner and at a location (e.g., the wastewater treatment plant or the Discharger's offices) such that the records are accessible to Regional Water Board staff. The minimum retention period specified in Attachment D, Provision IV, shall be extended during the course of any unresolved litigation regarding permit-related discharges, or when requested by Regional Water Board or U.S. EPA, Region IX, staff.

A copy of the permit shall be maintained at the discharge facility and be available at all times to operating personnel.

B. Records of Monitoring – Supplement to Attachment D, Provision IV.B

Monitoring records shall include the following:

1. **Analytical Information.** Records shall include analytical method detection limits, minimum levels, reporting levels, and related quantification parameters.

2. **Disinfection Process.** For the disinfection process, records shall include the following:
   a. For bacteriological analyses:
      i. Wastewater flow rate at the time of sample collection; and
      ii. Required statistical parameters for cumulative bacterial values (e.g., moving median or geometric mean for the number of samples or sampling period identified in the MRP).
   b. For the chlorination process (when chlorine is used for disinfection), at least daily average values for the following:
      i. Chlorine residual of treated wastewater as it enters the chlorine contact basin (mg/L);
      ii. Chlorine dosage (kg/day); and
      iii. Dechlorination chemical dosage (kg/day).
3. **Wastewater Treatment Process Solids.** For each treatment unit process that involves solids removal from the wastewater stream, records shall include the following:
   a. Total volume or mass of solids removed from each collection unit (e.g., grit, skimmings, undigested biosolids, or combination) for each calendar month or other time period as appropriate, but not to exceed annually; and
   b. Final disposition of such solids (e.g., landfill, other subsequent treatment unit).
4. **Treatment Process Bypasses.** For all treatment process bypasses, including wet weather blending, records shall include the following:
   a. Chronological log of treatment process bypasses;
   b. Identification of treatment processes bypassed;
   c. Beginning and ending dates and times of bypasses;
   d. Bypass durations;
   e. Estimated bypass volumes; and
   f. Description of, or reference to other reports describing, the bypasses, their cause, the corrective actions taken (except for wet weather blending explicitly approved within the permit and in compliance with any related permit conditions), and any additional monitoring conducted.
5. **Treatment Plant Overflows.** The Discharger shall retain a chronological log of overflows at the treatment plant, including the headworks and all units and appurtenances downstream, and records supporting the information provided in accordance with Provision V.E.2, below.

C. Claims of Confidentiality – Not Supplemented

V. STANDARD PROVISIONS – REPORTING

A. Duty to Provide Information – Not Supplemented

B. Signatory and Certification Requirements – Not Supplemented

C. Monitoring Reports – Supplement to Attachment D, Provision V.C

1. Self-Monitoring Reports. For each reporting period established in the MRP, the Discharger shall submit a self-monitoring report to the Regional Water Board in accordance with the requirements listed in the MRP and below:

a. Transmittal Letter. Each self-monitoring report shall be submitted with a transmittal letter that includes the following:

i. Identification of all violations of effluent limitations or other waste discharge requirements found during the reporting period;

ii. Details regarding the violations, such as parameters, magnitude, test results, frequency, and dates;

iii. Causes of the violations;

iv. Corrective actions taken or planned to resolve violations and prevent recurrences, and dates or time schedules for implementation (the Discharger may refer to previously submitted reports that address the corrective actions);

v. Explanation for any data invalidation. Data should not be submitted in a self-monitoring report if it does not meet quality assurance/quality control standards. However, if the Discharger wishes to invalidate a measurement after submitting it in a self-monitoring report, the Discharger shall identify the measurement suspected to be invalid and state the Discharger's intent to submit, within 60 days, a formal request to invalidate the measurement. The formal request shall include the original measurement in question, the reason for invalidating the measurement, all relevant documentation that supports invalidation (e.g., laboratory sheet, log entry, test results), and a discussion of the corrective actions taken or planned (with a time schedule for completion) to prevent recurrence of the sampling or measurement problem;

vi. Description of blending, if any. If the Discharger blends, it shall describe the duration of blending events and certify whether the blending complied with all conditions for blending;

vii. Description of other bypasses, if any. If the Discharger bypasses any treatment units (other than blending), it shall describe the duration of the bypasses and effluent quality during those times; and

viii. Signature. The transmittal letter shall be signed in accordance with Attachment D, Provision V.B.

b. Compliance Evaluation Summary. Each self-monitoring report shall include a compliance evaluation summary that addresses each parameter for which the permit specifies effluent limitations, the number of samples taken during the monitoring period, and the number of samples that exceed the effluent limitations.

c. More Frequent Monitoring. If the Discharger monitors any pollutant more frequently than required by the MRP, the Discharger shall include the results of such monitoring in the calculation and reporting of the data submitted in the self-monitoring report.

d. Analysis Results

i. Tabulation. Each self-monitoring report shall include tabulations of all required analyses and observations, including parameters, dates, times, sample stations, types of samples, test results, method detection limits, method minimum levels, and method reporting levels (if applicable), signed by the laboratory director or other responsible official.

ii. Multiple Samples. Unless the MRP specifies otherwise, when determining compliance with effluent limitations (other than instantaneous effluent limitations) and more than one sample result is available, the Discharger shall compute the arithmetic mean. If the data set contains one or more results that are "Detected, but Not Quantified (DNQ) or "Not Detected" (ND), the Discharger shall instead compute the median in accordance with the following procedure:

(a) The data set shall be ranked from low to high, reported ND determinations lowest, DNQ determinations next, followed by quantified values (if any). The order of the individual ND or DNQ determinations is unimportant.

(b) The median of the data set shall be determined. If the data set has an odd number of data points, the median is the middle value. If the data set has an even number of data points, the median is the average of the two values around the middle, unless one or both of these values is ND or DNQ, in which case the median shall be the lower of the two results (where DNQ is lower than a quantified value and ND is lower than DNQ).

iii. Duplicate Samples. The Discharger shall report the average of duplicate sample analyses when reporting for a single sample result (or the median if one or more of the duplicates is DNQ or ND [see Provision V.C.1.d.ii, above]). For bacteria indicators, the Discharger shall report the geometric mean of the duplicate analyses.

iv. Dioxin-TEQ. The Discharger shall report for each dioxin and furan congener the analytical results of effluent monitoring, including the reporting level, the method detection limit, and the measured concentration. The Discharger shall report all measured values of individual congeners, including data qualifiers. When calculating dioxin-TEQ, the Discharger shall set congener concentrations below the minimum levels (MLs) to zero. The Discharger shall calculate and report dioxin-TEQ using the

following formula, where the MLs, toxicity equivalency factors (TEFs), and bioaccumulation equivalency factors (BEFs) are as provided in Table A:

$$\text{Dioxin-TEQ} = \Sigma\ (C_x \times TEF_x \times BEF_x)$$

where: C_x = measured or estimated concentration of congener *x*
TEF_x = toxicity equivalency factor for congener *x*
BEF_x = bioaccumulation equivalency factor for congener *x*

Table A

Minimum Levels, Toxicity Equivalency Factors,
and Bioaccumulation Equivalency Factors

Dioxin or Furan Congener	Minimum Level (pg/L)	2005 Toxicity Equivalency Factor (TEF)	Bioaccumulation Equivalency Factor (BEF)
2,3,7,8-TCDD	10	1.0	1.0
1,2,3,7,8-PeCDD	50	1.0	0.9
1,2,3,4,7,8-HxCDD	50	0.1	0.3
1,2,3,6,7,8-HxCDD	50	0.1	0.1
1,2,3,7,8,9-HxCDD	50	0.1	0.1
1,2,3,4,6,7,8-HpCDD	50	0.01	0.05
OCDD	100	0.0003	0.01
2,3,7,8-TCDF	10	0.1	0.8
1,2,3,7,8-PeCDF	50	0.03	0.2
2,3,4,7,8-PeCDF	50	0.3	1.6
1,2,3,4,7,8-HxCDF	50	0.1	0.08
1,2,3,6,7,8-HxCDF	50	0.1	0.2
1,2,3,7,8,9-HxCDF	50	0.1	0.6
2,3,4,6,7,8-HxCDF	50	0.1	0.7
1,2,3,4,6,7,8-HpCDF	50	0.01	0.01
1,2,3,4,7,8,9-HpCDF	50	0.01	0.4
OCDF	100	0.0003	0.02

e. Results Not Yet Available. The Discharger shall make all reasonable efforts to obtain analytical data for required parameter sampling in a timely manner. Certain analyses may require additional time to complete analytical processes and report results. In these cases, the Discharger shall describe the circumstances in the self-monitoring report and include the data for these parameters and relevant discussions of any violations in the next self-monitoring report due after the results are available.

f. Annual Self-Monitoring Reports. By the date specified in the MRP, the Discharger shall submit an annual self-monitoring report covering the previous calendar year. The report shall contain the following:

i. Comprehensive discussion of treatment plant performance, including documentation of any blending or other bypass events, and compliance with the permit. This discussion shall include any corrective actions taken or planned, such as changes to facility equipment or operation practices that may be needed to achieve compliance,

and any other actions taken or planned that are intended to improve the performance and reliability of wastewater collection, treatment, or disposal practices;

ii. List of approved analyses, including the following:

(a) List of analyses for which the Discharger is certified;

(b) List of analyses performed for the Discharger by a separate certified laboratory (copies of reports signed by the laboratory director of that laboratory need not be submitted but shall be retained onsite); and

(c) List of "waived" analyses, as approved;

iii. Plan view drawing or map showing the Discharger's facility, flow routing, and sampling and observation station locations; and

iv. Results of facility report reviews. The Discharger shall regularly review, revise, and update, as necessary, the Operation and Maintenance Manual, Contingency Plan, Spill Prevention Plan, and Wastewater Facilities Status Report so these documents remain useful and relevant to current practices. At a minimum, reviews shall be conducted annually. The Discharger shall describe or summarize its review and evaluation procedures, recommended or planned actions, and estimated time schedule for implementing these actions. The Discharger shall complete changes to these documents to ensure that they remain up-to-date.

D. Compliance Schedules – Not supplemented

E. Twenty-Four Hour Reporting – Supplement to Attachment D, Provision V.E

1. Oil or Other Hazardous Material Spills

a. Within 24 hours of becoming aware of a spill of oil or other hazardous material not contained onsite and completely cleaned up, the Discharger shall report as follows:

i. If the spill exceeds reportable quantities for hazardous materials listed in 40 C.F.R. part 302. The Discharger shall call the California Office of Emergency Services (800-852-7550).

ii. If the spill does not exceed reportable quantities for hazardous materials listed in 40 C.F.R., part 302, the Discharger shall call the Regional Water Board (510-622-2369).

b. The Discharger shall submit a written report to the Regional Water Board within five working days following either of the above telephone notifications unless directed otherwise by Regional Water Board staff. A report submitted electronically is acceptable. The written report shall include the following:

i. Date and time of spill, and duration if known;

ii. Location of spill (street address or description of location);

iii. Nature of material spilled;

iv. Quantity of material spilled;

v. Receiving water body affected, if any;

vi. Cause of spill;

vii. Estimated size of affected area;

viii. Observed impacts to receiving waters (e.g., oil sheen, fish kill, water discoloration);

ix. Corrective actions taken to contain, minimize, or clean up the spill;

x. Future corrective actions planned to prevent recurrence, and implementation schedule; and

xi. Persons or agencies notified.

2. Unauthorized Municipal Wastewater Treatment Plant Discharges[1]

a. Two-Hour Notification. For any unauthorized discharge that enters a drainage channel or surface water, the Discharger shall, as soon as possible, but not later than two hours after becoming aware of the discharge, notify the California Office of Emergency Services (800-852-7550) and the local health officer or director of environmental health with jurisdiction over the affected water body. Notification shall include the following:

i. Incident description and cause;

ii. Location of threatened or involved waterways or storm drains;

iii. Date and time that the unauthorized discharge started;

iv. Estimated quantity and duration of the unauthorized discharge (to the extent known), and estimated amount recovered;

v. Level of treatment prior to discharge (e.g., raw wastewater, primary-treated wastewater, or undisinfected secondary-treated wastewater); and

vi. Identity of person reporting the unauthorized discharge.

[1] California Code of Regulations, Title 23, section 2250(b), defines an unauthorized discharge to be a discharge, not regulated by waste discharge requirements, of treated, partially-treated, or untreated wastewater resulting from the intentional or unintentional diversion of wastewater from a collection, treatment, or disposal system.

b. Five-Day Written Report. Within five business days following the two-hour notification, the Discharger shall submit a written report that includes, in addition to the information listed in Provision V.E.2.a, above, the following:

i. Methods used to delineate the geographical extent of the unauthorized discharge within receiving waters;

ii. Efforts implemented to minimize public exposure to the unauthorized discharge;

iii. Visual observations of the impacts (if any) noted in the receiving waters (e.g., fish kill, discoloration of receiving water) and extent of sampling if conducted;

iv. Corrective measures taken to minimize the impact of the unauthorized discharge;

v. Measures to be taken to minimize the potential for a similar unauthorized discharge in the future;

vi. Summary of Spill Prevention Plan or Operation and Maintenance Manual modifications to be made, if necessary, to minimize the potential for future unauthorized discharges; and

vii. Quantity and duration of the unauthorized discharge, and the amount recovered.

F. Planned Changes – Not supplemented

G. Anticipated Noncompliance – Not supplemented

H. Other Noncompliance – Not supplemented

I. Other Information – Not supplemented

VI. STANDARD PROVISION – ENFORCEMENT – Not Supplemented

VII. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS – Not Supplemented

VIII. DEFINITIONS – Addition to Attachment D

More definitions can be found in Attachment A of this NPDES Permit.

A. Arithmetic Calculations

1. **Geometric Mean**. The antilog of the log mean or the back-transformed mean of the logarithmically transformed variables, which is equivalent to the multiplication of the antilogarithms. The geometric mean can be calculated with either of the following equations:

Geometric Mean $= Anti\log\left(\frac{1}{N}\sum_{i=1}^{N} Log(C_i)\right)$

or

Geometric Mean $= (C_1 \times C_2 \times \ldots \times C_N)^{1/N}$

Where "N" is the number of data points for the period analyzed and "C" is the concentration for each of the "N" data points.

2. **Mass Emission Rate.** The rate of discharge expressed in mass. The mass emission rate is obtained from the following calculation for any calendar day:

$$\text{Mass emission rate (lb/day)} = \frac{8.345}{N}\sum_{i=1}^{N} Q_i C_i$$

$$\text{Mass emission rate (kg/day)} = \frac{3.785}{N}\sum_{i=1}^{N} Q_i C_i$$

In which "N" is the number of samples analyzed in any calendar day and "Q_i" and "C_i" are the flow rate (MGD) and the constituent concentration (mg/L) associated with each of the "N" grab samples that may be taken in any calendar day. If a composite sample is taken, "C_i" is the concentration measured in the composite sample and "Q_i" is the average flow rate occurring during the period over which the samples are composited. The daily concentration of a constituent measured over any calendar day shall be determined from the flow-weighted average of the same constituent in the combined waste streams as follows:

$$C_d = \text{Average daily concentration} = \frac{1}{Q_t}\sum_{i=1}^{N} Q_i C_i$$

In which "N" is the number of component waste streams and "Q" and "C" are the flow rate (MGD) and the constituent concentration (mg/L) associated with each of the "N" waste streams. "Q_t" is the total flow rate of the combined waste streams.

3. **Removal Efficiency.** The ratio of pollutants removed by the treatment facilities to pollutants entering the treatment facilities (expressed as a percentage). The Discharger shall determine removal efficiencies using monthly averages (by calendar month unless otherwise specified) of pollutant concentration of influent and effluent samples collected at about the same time and using the following equation (or its equivalent):

   Removal Efficiency (%) = 100 × [1-(Effluent Concentration/Influent Concentration)]

B. Blending – the practice of bypassing biological treatment units and recombining the bypass wastewater with biologically-treated wastewater.

C. Composite Sample – a sample composed of individual grab samples collected manually or by an automatic sampling device on the basis of time or flow as specified in the MRP. For flow-based composites, the proportion of each grab sample included in the composite sample shall be within plus or minus five percent (+/-5%) of the representative flow of the waste stream being measured at the time of grab sample collection. Alternatively, equal volume grab samples may

be individually analyzed with the flow-weighted average calculated by averaging flow-weighted ratios of each grab sample analytical result. Grab samples comprising time-based composite samples shall be collected at intervals not greater than those specified in the MRP. The quantity of each grab sample comprising a time-based composite sample shall be a set of flow proportional volumes as specified in the MRP. If a particular time-based or flow-based composite sampling protocol is not specified in the MRP, the Discharger shall determine and implement the most representative protocol.

D. Duplicate Sample – a second sample taken from the same source and at the same time as an initial sample (such samples are typically analyzed identically to measure analytical variability).

E. Grab Sample – an individual sample collected during a short period not exceeding 15 minutes. Grab samples represent only the condition that exists at the time the sample is collected.

F. Overflow – the intentional or unintentional spilling or forcing out of untreated or partially-treated waste from a transport system (e.g., through manholes, at pump stations, or at collection points) upstream of the treatment plant headworks or from any part of a treatment plant.

G. Priority Pollutants – those constituents referred to in 40 C.F.R. part 122 as promulgated in the Federal Register, Vol. 65, No. 97, Thursday, May 18, 2000, also known as the California Toxics Rule.

H. Untreated waste – raw wastewater.

Table B

List of Monitoring Parameters and Analytical Methods

CTR No.	Pollutant/Parameter	Analytical Method[2]	Minimum Levels[3] (µg/l)											
			GC	GCMS	LC	Color	FAA	GFAA	ICP	ICP MS	SPGFAA	HYD RIDE	CVAA	DCP
1	Antimony	204.2					10	5	50	0.5	5	0.5		1000
2	Arsenic	206.3				20		2	10	2	2	1		1000
3	Beryllium						20	0.5	2	0.5	1			1000
4	Cadmium	200 or 213					10	0.5	10	0.25	0.5			1000
5a	Chromium (III)	SM 3500												
5b	Chromium (VI)	SM 3500				10	5							1000
	Chromium (total)[4]	SM 3500					50	2	10	0.5	1			1000
6	Copper	200.9					25	5	10	0.5	2			1000
7	Lead	200.9					20	5	5	0.5	2			10,000
8	Mercury	1631 (note)[5]												
9	Nickel	249.2					50	5	20	1	5			1000
10	Selenium	200.8 or SM 3114B or C						5	10	2	5	1		1000
11	Silver	272.2					10	1	10	0.25	2			1000
12	Thallium	279.2					10	2	10	1	5			1000
13	Zinc	200 or 289					20		20	1	10			
14	Cyanide	SM 4500 CN^- C or I				5								
15	Asbestos (only required for dischargers to MUN waters)[6]	0100.2 [7]												
16	2,3,7,8-TCDD and 17 congeners (Dioxin)	1613												
17	Acrolein	603	2.0	5										
18	Acrylonitrile	603	2.0	2										
19	Benzene	602	0.5	2										
33	Ethylbenzene	602	0.5	2										
39	Toluene	602	0.5	2										
20	Bromoform	601	0.5	2										
21	Carbon Tetrachloride	601	0.5	2										
22	Chlorobenzene	601	0.5	2										
23	Chlorodibromomethane	601	0.5	2										
24	Chloroethane	601	0.5	2										
25	2-Chloroethylvinyl Ether	601	1	1										
26	Chloroform	601	0.5	2										

[2] The suggested method is the U.S. EPA Method unless otherwise specified (SM = Standard Methods). The Discharger may use another U.S. EPA-approved or recognized method if that method has a level of quantification below the applicable water quality objective. Where no method is suggested, the Discharger has the discretion to use any standard method.

[3] Minimum levels are from the *State Implementation Policy*. They are the concentration of the lowest calibration standard for that technique based on a survey of contract laboratories. Laboratory techniques are defined as follows: GC = Gas Chromatography; GCMS = Gas Chromatography/Mass Spectrometry; LC = High Pressure Liquid Chromatography; Color = Colorimetric; FAA = Flame Atomic Absorption; GFAA = Graphite Furnace Atomic Absorption; ICP = Inductively Coupled Plasma; ICPMS = Inductively Coupled Plasma/Mass Spectrometry; SPGFAA = Stabilized Platform Graphite Furnace Atomic Absorption (i.e., U.S. EPA 200.9); Hydride = Gaseous Hydride Atomic Absorption; CVAA = Cold Vapor Atomic Absorption; DCP = Direct Current Plasma.

[4] Analysis for total chromium may be substituted for analysis of chromium (III) and chromium (VI) if the concentration measured is below the lowest hexavalent chromium criterion (11 ug/l).

[5] The Discharger shall use ultra-clean sampling (U.S. EPA Method 1669) and ultra-clean analytical methods (U.S. EPA Method 1631) for mercury monitoring. The minimum level for mercury is 2 ng/l (or 0.002 ug/l).

[6] MUN = Municipal and Domestic Supply. This designation, if applicable, is in the Findings of the permit.

[7] Determination of Asbestos Structures over 10 [micrometers] in Length in Drinking Water Using MCE Filters, U.S. EPA 600/R-94-134, June 1994.

CTR No.	Pollutant/Parameter	Analytical Method[2]	Minimum Levels[3] (µg/l)											
			GC	GCMS	LC	Color	FAA	GFAA	ICP	ICP MS	SPGFAA	HYD RIDE	CVAA	DCP
75	1,2-Dichlorobenzene	601	0.5	2										
76	1,3-Dichlorobenzene	601	0.5	2										
77	1,4-Dichlorobenzene	601	0.5	2										
27	Dichlorobromomethane	601	0.5	2										
28	1,1-Dichloroethane	601	0.5	1										
29	1,2-Dichloroethane	601	0.5	2										
30	1,1-Dichloroethylene or 1,1-Dichloroethene	601	0.5	2										
31	1,2-Dichloropropane	601	0.5	1										
32	1,3-Dichloropropylene or 1,3-Dichloropropene	601	0.5	2										
34	Methyl Bromide or Bromomethane	601	1.0	2										
35	Methyl Chloride or Chloromethane	601	0.5	2										
36	Methylene Chloride or Dichloromethane	601	0.5	2										
37	1,1,2,2-Tetrachloroethane	601	0.5	1										
38	Tetrachloroethylene	601	0.5	2										
40	1,2-Trans-Dichloroethylene	601	0.5	1										
41	1,1,1-Trichloroethane	601	0.5	2										
42	1,1,2-Trichloroethane	601	0.5	2										
43	Trichloroethene	601	0.5	2										
44	Vinyl Chloride	601	0.5	2										
45	2-Chlorophenol	604	2	5										
46	2,4-Dichlorophenol	604	1	5										
47	2,4-Dimethylphenol	604	1	2										
48	2-Methyl-4,6-Dinitrophenol or Dinitro-2-methylphenol	604	10	5										
49	2,4-Dinitrophenol	604	5	5										
50	2-Nitrophenol	604		10										
51	4-Nitrophenol	604	5	10										
52	3-Methyl-4-Chlorophenol	604	5	1										
53	Pentachlorophenol	604	1	5										
54	Phenol	604	1	1		50								
55	2,4,6-Trichlorophenol	604	10	10										
56	Acenaphthene	610 HPLC	1	1	0.5									
57	Acenaphthylene	610 HPLC		10	0.2									
58	Anthracene	610 HPLC		10	2									
60	Benzo(a)Anthracene or 1,2 Benzanthracene	610 HPLC	10	5										
61	Benzo(a)Pyrene	610 HPLC		10	2									
62	Benzo(b)Fluoranthene or 3,4 Benzofluoranthene	610 HPLC		10	10									
63	Benzo(ghi)Perylene	610 HPLC		5	0.1									
64	Benzo(k)Fluoranthene	610 HPLC		10	2									
74	Dibenzo(a,h)Anthracene	610 HPLC		10	0.1									
86	Fluoranthene	610 HPLC	10	1	0.05									
87	Fluorene	610 HPLC		10	0.1									
92	Indeno(1,2,3-cd) Pyrene	610 HPLC		10	0.05									
100	Pyrene	610 HPLC		10	0.05									
68	Bis(2-Ethylhexyl)Phthalate	606 or 625	10	5										
70	Butylbenzyl Phthalate	606 or 625	10	10										
79	Diethyl Phthalate	606 or 625	10	2										

CTR No.	Pollutant/Parameter	Analytical Method[2]	Minimum Levels[3] (µg/l)											
			GC	GCMS	LC	Color	FAA	GFAA	ICP	ICP MS	SPGFAA	HYD RIDE	CVAA	DCP
80	Dimethyl Phthalate	606 or 625	10	2										
81	Di-n-Butyl Phthalate	606 or 625		10										
84	Di-n-Octyl Phthalate	606 or 625		10										
59	Benzidine	625		5										
65	Bis(2-Chloroethoxy)Methane	625		5										
66	Bis(2-Chloroethyl)Ether	625	10	1										
67	Bis(2-Chloroisopropyl)Ether	625	10	2										
69	4-Bromophenyl Phenyl Ether	625	10	5										
71	2-Chloronaphthalene	625		10										
72	4-Chlorophenyl Phenyl Ether	625		5										
73	Chrysene	625		10	5									
78	3,3'-Dichlorobenzidine	625		5										
82	2,4-Dinitrotoluene	625	10	5										
83	2,6-Dinitrotoluene	625		5										
85	1,2-Diphenylhydrazine (note)[8]	625		1										
88	Hexachlorobenzene	625	5	1										
89	Hexachlorobutadiene	625	5	1										
90	Hexachlorocyclopentadiene	625	5	5										
91	Hexachloroethane	625	5	1										
93	Isophorone	625	10	1										
94	Naphthalene	625	10	1	0.2									
95	Nitrobenzene	625	10	1										
96	N-Nitrosodimethylamine	625	10	5										
97	N-Nitrosodi-n-Propylamine	625	10	5										
98	N-Nitrosodiphenylamine	625	10	1										
99	Phenanthrene	625		5	0.05									
101	1,2,4-Trichlorobenzene	625	1	5										
102	Aldrin	608	0.005											
103	α-BHC	608	0.01											
104	β-BHC	608	0.005											
105	γ-BHC (Lindane)	608	0.02											
106	δ-BHC	608	0.005											
107	Chlordane	608	0.1											
108	4,4'-DDT	608	0.01											
109	4,4'-DDE	608	0.05											
110	4,4'-DDD	608	0.05											
111	Dieldrin	608	0.01											
112	Endosulfan (alpha)	608	0.02											
113	Endosulfan (beta)	608	0.01											
114	Endosulfan Sulfate	608	0.05											
115	Endrin	608	0.01											
116	Endrin Aldehyde	608	0.01											
117	Heptachlor	608	0.01											
118	Heptachlor Epoxide	608	0.01											
119-125	PCBs: Aroclors 1016, 1221, 1232, 1242, 1248, 1254, 1260	608	0.5											
126	Toxaphene	608	0.5											

[8] Measurement for 1,2-Diphenylhydrazine may use azobenzene as a screen: if azobenzene is measured at >1 ug/l, then the Discharger shall analyze for 1,2-Diphenylhydrazine.

ATTACHMENT H – PRETREATMENT REQUIREMENTS

CALIFORNIA REGIONAL WATER QUALITY CONTROL
BOARD
SAN FRANCISCO BAY REGION

ATTACHMENT H

PRETREATMENT PROGRAM PROVISIONS

For

NPDES POTW WASTEWATER DISCHARGE PERMITS

March 2011
(Corrected May 2011)

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Attachment H: Pretreatment Program Provisions

A. The Discharger shall be responsible and liable for the performance of all Control Authority pretreatment requirements contained in 40 C.F.R. 403, including any regulatory revisions to Part 403. Where a Part 403 revision is promulgated after the effective date of the Discharger's permit and places mandatory actions upon the Discharger as Control Authority but does not specify a timetable for completion of the actions, the Discharger shall complete the required actions within six months from the issuance date of this permit or six months from the effective date of the Part 403 revisions, whichever comes later.

(If the Discharger cannot complete the required actions within the above six-month period due to the need to process local adoption of sewer use ordinance modifications or other substantial pretreatment program modifications, the Discharger shall notify the Executive Officer in writing at least 60 days prior to the six-month deadline. The written notification shall include a summary of completed required actions, an explanation for why the six month deadline cannot be met, and a proposed timeframe to complete the rest of the required actions as soon as practical but not later than within twelve months of the issuance date of this permit or twelve months of the effective date of the Part 403 revisions, whichever comes later. The Executive Officer will notify the Discharger in writing within 30 days of receiving the request if the extension is not approved.)

The United States Environmental Protection Agency (U.S. EPA), the State and/or other appropriate parties may initiate enforcement action against a nondomestic user for noncompliance with applicable standards and requirements as provided in the Clean Water Act (Act).

B. The Discharger shall enforce the requirements promulgated under Sections 307(b), 307(c), 307(d) and 402(b) of the Act with timely, appropriate and effective enforcement actions. The Discharger shall cause nondomestic users subject to Federal Categorical Standards to achieve compliance no later than the date specified in those requirements or, in the case of a new nondomestic user, upon commencement of the discharge.

C. The Discharger shall perform the pretreatment functions as required in 40 C.F.R. 403 and amendments or modifications thereto including, but not limited to:

1. Implement the necessary legal authorities to fully implement the pretreatment regulations as provided in 40 C.F.R. 403.8(f)(1);

2. Implement the programmatic functions as provided in 40 C.F.R. 403.8(f)(2);

3. Publish an annual list of nondomestic users in significant noncompliance as provided per 40 C.F.R. 403.8(f)(2)(viii);

4. Provide for the requisite funding and personnel to implement the pretreatment program as provided in 40 C.F.R. 403.8(f)(3); and

5. Enforce the national pretreatment standards for prohibited discharges and categorical standards as provided in 40 C.F.R. 403.5 and 403.6, respectively.

D. The Discharger shall submit annually a report to U.S. EPA Region IX, the State Water Board and the Regional Water Board describing its pretreatment program activities over the previous calendar year. In the event that the Discharger is not in compliance with any conditions or requirements of the Pretreatment Program, the Discharger shall also include the reasons for noncompliance and a plan and schedule for achieving compliance. The report shall contain, but is not limited to, the information specified in Appendix H-1 entitled, "Requirements for Pretreatment Annual Reports." The annual report is due each year on February 28.

E. The Discharger shall submit a pretreatment semiannual report to U.S. EPA Region IX, the State Water Board and the Regional Water Board describing the status of its significant industrial users (SIUs). The report shall contain, but is not limited to, information specified in Appendix H-2 entitled, "Requirements for Pretreatment Semiannual Reports." The semiannual report is due July 31 for the period January through June. The information for the period July through December of each year shall be included in the Annual Report identified in Appendix H-1. The Executive Officer may exempt the Discharger from the semiannual reporting requirements on a case by case basis subject to State Water Board and U.S. EPA's comment and approval.

F. The Discharger shall conduct the monitoring of its treatment plant's influent, effluent, and sludge (biosolids) as described in Appendix H-4 entitled, "Requirements for Influent, Effluent and Sludge (Biosolids) Monitoring." (The term "biosolids," as used in this Attachment, shall have the same meaning as wastewater treatment plant "sludge" and will be used from this point forward.) The Discharger shall evaluate the results of the sampling and analysis during the preparation of the semiannual and annual reports to identify any trends. Signing the certification statement used to transmit the reports shall be deemed to certify the Discharger has completed this data evaluation. A tabulation of the data shall be included in the pretreatment annual report as specified in Appendix H-4. The Executive Officer may require more or less frequent monitoring on a case by case basis.

APPENDIX H-1

REQUIREMENTS FOR PRETREATMENT ANNUAL REPORTS

The Pretreatment Annual Report is due each year on February 28 and shall contain activities conducted during the previous calendar year. The purpose of the Annual Report is to:

- Describe the status of the Discharger's pretreatment program; and
- Report on the effectiveness of the program, as determined by comparing the results of the preceding year's program implementation.

The report shall contain, at a minimum, the following information:

A. Cover Sheet

The cover sheet shall include:

1. The name(s) and National Pollutant Discharge Elimination Discharge System (NPDES) permit number(s) of the Discharger(s) that is part of the Pretreatment Program;

2. The name, address and telephone number of a pretreatment contact person;

3. The period covered in the report;

4. A statement of truthfulness; and

5. The dated signature of a principal executive officer, ranking elected official, or other duly authorized employee who is responsible for overall operation of the Publicly Owned Treatment Works (POTW) (40 C.F.R. 403.12(m)).

B. Introduction

This section shall include:

1. Any pertinent background information related to the Discharger and/or the nondomestic user base of the area;

2. List of applicable interagency agreements used to implement the Discharger's pretreatment program (e.g., Memoranda of Understanding (MOU) with satellite sanitary sewer collection systems); and

3. A status summary of the tasks required by a Pretreatment Compliance Inspection (PCI), Pretreatment Compliance Audit (PCA), Cleanup and Abatement Order (CAO), or other pretreatment-related enforcement actions required by the Regional Water Board or the U.S. EPA. A more detailed discussion can be referenced and included in the section entitled, "Program Changes," if needed.

C. Definitions

This section shall include a list of key terms and their definitions that the Discharger uses to describe or characterize elements of its pretreatment program, or the Discharger may provide a reference to its website if the applicable definitions are available on-line.

D. Discussion of Upset, Interference and Pass Through

This section shall include a discussion of Upset, Interference or Pass Through incidents, if any, at the Discharger's treatment plant(s) that the Discharger knows of or suspects were caused by nondomestic user discharges. Each incident shall be described, at a minimum, consisting of the following information:

1. A description of what occurred;

2. A description of what was done to identify the source;

3. The name and address of the nondomestic user responsible;

4. The reason(s) why the incident occurred;

5. A description of the corrective actions taken; and

6. An examination of the local and federal discharge limits and requirements for the purposes of determining whether any additional limits or changes to existing requirements may be necessary to prevent other Upset, Interference or Pass Through incidents.

E. Influent, Effluent and Biosolids Monitoring Results

The Discharger shall evaluate the influent, effluent and biosolids monitoring results as specified in Appendix H-4 in preparation of this report. The Discharger shall retain the analytical laboratory reports with the Quality Assurance and Quality Control (QA/QC) data validation and make these reports available upon request.

This section shall include:

1. Description of the sampling procedures and an analysis of the results (see Appendix H-4 for specific requirements);
2. Tabular summary of the compounds detected (compounds measured above the detection limit for the analytical method used) for the monitoring data generated during the reporting year as specified in Appendix H-4;
3. Discussion of the investigation findings into any contributing sources of the compounds that exceed NPDES limits; and
4. Graphical representation of the influent and effluent metal monitoring data for the past five years with a discussion of any trends.

F. Inspection, Sampling and Enforcement Programs

This section shall include at a minimum the following information:

1. Inspections: Summary of the inspection program (e.g., criteria for determining the frequency of inspections and inspection procedures);

2. Sampling Events: Summary of the sampling program (e.g., criteria for determining the frequency of sampling and chain of custody procedures); and

3. Enforcement: Summary of Enforcement Response Plan (ERP) implementation including dates for adoption, last revision and submission to the Regional Water Board.

G. Updated List of Regulated SIUs

This section shall contain a list of all of the federal categories that apply to SIUs regulated by the Discharger. The specific categories shall be listed including the applicable 40 C.F.R. subpart and section, and pretreatment standards (both maximum and average limits). Local limits developed by the Discharger shall be presented in a table including the applicability of the local limits to SIUs. If local limits do not apply uniformly to SIUs, specify the applicability in the tables listing the categorical industrial users (CIUs) and non-categorical SIUs. Tables developed in Sections 7A and 7B can be used to present or reference this information.

1. CIUs - Include a table that alphabetically lists the CIUs regulated by the Discharger as of the end of the reporting period. This list shall include:

   a. Name;

   b. Address;

   c. Applicable federal category(ies);

   d. Reference to the location where the applicable Federal Categorical Standards are presented in the report;

   e. Identify all deletions and additions keyed to the list submitted in the previous annual report. All deletions shall be briefly explained (e.g., closure, name change, ownership change, reclassification, declassification); and

   f. Information, calculations and data used to determine the limits for those CIUs for which a combined waste stream formula is applied.

2. Non-categorical SIUs - Include a table that alphabetically lists the SIUs not subject to any federal categorical standards that were regulated by the Discharger as of the end of the reporting period. This list shall include:

   a. Name;

b. Address;

c. A brief description of the type of business;

d. Identify all deletions and additions keyed to the list submitted in the previous annual report. All deletions shall be briefly explained (e.g., closure, name change, ownership change, reclassification, declassification); and

e. Indicate the applicable discharge limits (e.g., different from local limits) to which the SIUs are subject and reference to the location where the applicable limits (e.g., local discharge limits) are presented in the report.

H. SIU (categorical and non-categorical) Compliance Activities

The information required in this section may be combined in the table developed in Section 7 above.

1. **Inspection and Sampling Summary:** This section shall contain a summary of all the SIU inspections and sampling activities conducted by the Discharger and sampling activities conducted by the SIU over the reporting year to gather information and data regarding SIU compliance. The summary shall include:

   a. The number of inspections and sampling events conducted for each SIU by the Discharger;

   b. The number of sampling events conducted by the SIU. Identify SIUs that are operating under an approved Total Toxic Organic Management Plan;

   c. The quarters in which the above activities were conducted; and

   d. The compliance status of each SIU, delineated by quarter, and characterized using all applicable descriptions as given below:

      (1) Consistent compliance;

      (2) Inconsistent compliance;

      (3) Significant noncompliance;

      (4) On a compliance schedule to achieve compliance (include the date final compliance is required);

      (5) Not in compliance and not on a compliance schedule; and

      (6) Compliance status unknown, and why not.

2. **Enforcement Summary:** This section shall contain a summary of SIU compliance and enforcement activities during the reporting year. The summary may be included in the summary

table developed in section 8A and shall include the names and addresses of all SIUs affected by the actions identified below. For each notice specified in enforcement action "i" through "iv," indicate whether it was for an infraction of a federal or local standard/limit or requirement.

a. Warning letters or notices of violations regarding SIUs' apparent noncompliance with or violation of any federal pretreatment categorical standards and/or requirements, or local limits and/or requirements;

b. Administrative Orders regarding the SIUs' apparent noncompliance with or violation of any federal pretreatment categorical standards and/or requirements, or local limits and/or requirements;

c. Civil actions regarding the SIUs' apparent noncompliance with or violation of any federal pretreatment categorical standards and/or requirements, or local limits and/or requirements;

d. Criminal actions regarding the SIUs' apparent noncompliance with or violation of any federal pretreatment categorical standards and/or requirements, or local limits and/or requirements;

e. Assessment of monetary penalties. Identify the amount of penalty in each case and reason for assessing the penalty;

f. Order to restrict/suspend discharge to the Discharger; and

g. Order to disconnect the discharge from entering the Discharger.

3. July-December Semiannual Data: For SIU violations/noncompliance during the semiannual reporting period from July 1 through December 31, provide the following information:

a. Name and facility address of the SIU;

b. Indicate if the SIU is subject to Federal Categorical Standards; if so, specify the category including the subpart that applies;

c. For SIUs subject to Federal Categorical Standards, indicate if the violation is of a categorical or local standard;

d. Indicate the compliance status of the SIU for the two quarters of the reporting period; and

e. For violations/noncompliance identified in the reporting period, provide:

(1) The date(s) of violation(s);

(2) The parameters and corresponding concentrations exceeding the limits and the discharge limits for these parameters; and

(3) A brief summary of the noncompliant event(s) and the steps that are being taken to achieve compliance.

I. Baseline Monitoring Report Update

This section shall provide a list of CIUs added to the pretreatment program since the last annual report. This list of new CIUs shall summarize the status of the respective Baseline Monitoring Reports (BMR). The BMR must contain the information specified in 40 C.F.R. 403.12(b). For each new CIU, the summary shall indicate when the BMR was due; when the CIU was notified by the Discharger of this requirement; when the CIU submitted the report; and/or when the report is due.

J. Pretreatment Program Changes

This section shall contain a description of any significant changes in the Pretreatment Program during the past year including, but not limited to:

1. Legal authority;
2. Local limits;
3. Monitoring/ inspection program and frequency;
4. Enforcement protocol;
5. Program's administrative structure;
6. Staffing level;
7. Resource requirements;
8. Funding mechanism;
9. If the manager of the Discharger's pretreatment program changed, a revised organizational chart shall be included; and
10. If any element(s) of the program is in the process of being modified, this intention shall also be indicated.

K. Pretreatment Program Budget

This section shall present the budget spent on the Pretreatment Program. The budget, either by the calendar or fiscal year, shall show the total expenses required to implement the pretreatment program. A brief discussion of the source(s) of funding shall be provided. In addition, the Discharger shall make available upon request specific details on its pretreatment program expense amounts such as for personnel, equipment, and chemical analyses.

L. Public Participation Summary

This section shall include a copy of the public notice as required in 40 C.F.R. 403.8(f)(2)(viii). If a notice was not published, the reason shall be stated.

M. Biosolids Storage and Disposal Practice

This section shall describe how treated biosolids are stored and ultimately disposed. If a biosolids storage area is used, it shall be described in detail including its location, containment features and biosolids handling procedures.

N. Other Pollutant Reduction Activities

This section shall include a brief description of any programs the Discharger implements to reduce pollutants from nondomestic users that are not classified as SIUs. If the Discharger submits any of this program information in an Annual Pollution Prevention Report, reference to this other report shall satisfy this reporting requirement.

O. Other Subjects

Other information related to the Pretreatment Program that does not fit into any of the above categories should be included in this section.

P. Permit Compliance System (PCS) Data Entry Form

The annual report shall include the PCS Data Entry Form. This form shall summarize the enforcement actions taken against SIUs in the past year. This form shall include the following information:

1. Discharger's name,
2. NPDES Permit number,
3. Period covered by the report,
4. Number of SIUs in significant noncompliance (SNC) that are on a pretreatment compliance schedule,
5. Number of notices of violation and administrative Orders issued against SIUs,
6. Number of civil and criminal judicial actions against SIUs,
7. Number of SIUs that have been published as a result of being in SNC, and
8. Number of SIUs from which penalties have been collected.

APPENDIX H-2

REQUIREMENTS FOR JANUARY-JUNE PRETREATMENT SEMIANNUAL REPORT

The pretreatment semiannual report is due on July 31 for pretreatment program activities conducted from January through June unless an exception has been granted by the Regional Water Board's Executive Officer (e.g., pretreatment programs without any SIUs may qualify for an exception to the pretreatment semiannual report). Pretreatment activities conducted from July through December of each year shall be included in the Pretreatment Annual Report as specified in Appendix H-1. The pretreatment semiannual report shall contain, at a minimum the following information:

A. Influent, Effluent and Biosolids Monitoring

The influent, effluent and biosolids monitoring results shall be evaluated in preparation of this report. The Discharger shall retain analytical laboratory reports with the QA/QC data validation and make these reports available upon request. The Discharger shall also make available upon request a description of its influent, effluent and biosolids sampling procedures. Violations of any parameter that exceed NPDES limits shall be identified and reported. The contributing source(s) of the parameters that exceed NPDES limits shall be investigated and discussed.

B. Significant Industrial User Compliance Status

This section shall contain a list of all SIUs that were not in consistent compliance with all pretreatment standards/limits or requirements for the reporting period. For the reported SIUs, the compliance status for the previous semiannual reporting period shall be included. Once the SIU has determined to be out of compliance, the SIU shall be included in subsequent reports until consistent compliance has been achieved. A brief description detailing the actions that the SIU undertook to come back into compliance shall be provided.

For each SIU on the list, the following information shall be provided:

1. Name and facility address of the SIU;

2. Indicate if the SIU is subject to Federal Categorical Standards; if so, specify the category including the subpart that applies;

3. For SIUs subject to Federal Categorical Standards, indicate if the violation is of a categorical or local standard;

4. Indicate the compliance status of the SIU for the two quarters of the reporting period; and

5. For violations/noncompliance identified in the reporting period, provide:

    a. The date(s) of violation(s);

    b. The parameters and corresponding concentrations exceeding the limits and the discharge limits for these parameters; and

c. A brief summary of the noncompliant event(s) and the steps that are being taken to achieve compliance.

C. Discharger's Compliance with Pretreatment Program Requirements

This section shall contain a discussion of the Discharger's compliance status with the Pretreatment Program Requirements as indicated in the latest Pretreatment Compliance Audit (PCA) Report or Pretreatment Compliance Inspection (PCI) Report. It shall contain a summary of the following information:

1. Date of latest PCA or PCI report;

2. Date of the Discharger's response;

3. List of unresolved issues; and

4. Plan(s) and schedule for resolving the remaining issues.

APPENDIX H-3

SIGNATURE REQUIREMENTS FOR PRETREATMENT ANNUAL AND SEMIANNUAL REPORTS

The pretreatment annual and semiannual reports shall be signed by a principal executive officer, ranking elected official, or other duly authorized employee who is responsible for the overall operation of the Discharger [POTW - 40 C.F.R. 403.12(m)]. Signed copies of the reports shall be submitted to the State Water Board and the Regional Water Board through the electronic self-monitoring report (eSMR) module of the California Integrated Water Quality System (CIWQS). Signed copies of the reports shall also be submitted electronically to U.S. EPA at R9Pretreatment@epa.gov or as instructed otherwise.

APPENDIX H-4

REQUIREMENTS FOR INFLUENT, EFFLUENT AND BIOSOLIDS MONITORING

The Discharger shall conduct sampling of its treatment plant's influent, effluent and biosolids at the frequency shown in **the pretreatment requirements table** of the Monitoring and Reporting Program (MRP, Attachment E). When sampling periods coincide, one set of test results, reported separately, may be used for those parameters that are required to be monitored by both the influent and effluent monitoring requirements of the MRP and the Pretreatment Program. The Pretreatment Program monitoring reports as required in Appendices H-1 and H-2 shall be transmitted to the Pretreatment Program Coordinator.

A. Reduction of Monitoring Frequency

The minimum frequency of Pretreatment Program influent, effluent, and biosolids monitoring shall be dependent on the number of SIUs identified in the Discharger's Pretreatment Program as indicated in Table H-1.

Table H-1: Minimum Frequency of Pretreatment Program Monitoring	
Number of SIUs	Minimum Frequency
< 5	Once every five years
> 5 and < 50	Once every year
> 50	Twice per year

If the Discharger's required monitoring frequency is greater than the minimum specified in Table H-1, the Discharger may request a reduced monitoring frequency for that constituent(s) as part of its application for permit reissuance if it meets the following criteria:

The monitoring data for the constituent(s) consistently show non-detect (ND) levels for the effluent monitoring and very low (i.e., near ND) levels for influent and biosolids monitoring for a minimum of eight previous years' worth of data.

The Discharger's request shall include tabular summaries of the data and a description of the trends in the industrial, commercial, and residential customers in the Discharger's service area that demonstrate control over the sources of the constituent(s). The Regional Water Board may grant a reduced monitoring frequency in the reissued permit after considering the information provided by the Discharger and any other relevant information.

B. Influent and Effluent Monitoring

The Discharger shall monitor for the parameters using the required sampling and test methods listed in **the pretreatment table** of the MRP. Any test method substitutions must have received prior written Executive Officer approval. Influent and effluent sampling locations shall be the same as those sites specified in the MRP.

The influent and effluent samples should be taken at staggered times to account for treatment plant detention time. Appropriately staggered sampling is considered consistent with the requirement for collection of effluent samples coincident with influent samples in Section III.A.3.a(2) of Attachment D. All samples must be representative of daily operations. Sampling and analysis shall be performed in accordance with the techniques prescribed in 40 C.F.R. 136 and amendments thereto. For effluent monitoring, the reporting limits for the individual parameters shall be at or below the minimum levels (MLs) as stated in the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (2000) [also known as the State Implementation Policy (SIP)]; any revisions to the MLs shall be adhered to. If a parameter does not have a stated ML, then the Discharger shall conduct the analysis using the lowest commercially available and reasonably achievable detection levels.

The following report elements should be used to submit the influent and effluent monitoring results. A similarly structured format may be used but will be subject to Regional Water Board approval. The monitoring reports shall be submitted with the Pretreatment Annual Report identified in Appendix H-1.

1. Sampling Procedures, Sample Dechlorination, Sample Compositing, and Data Validation (applicable quality assurance/quality control) shall be performed in accordance with the techniques prescribed in 40 C.F.R. 136 and amendments thereto. The Discharger shall make available upon request its sampling procedures including methods of dechlorination, compositing, and data validation.

2. A tabulation of the test results for the detected parameters shall be provided.

3. Discussion of Results – The report shall include a complete discussion of the test results for the detected parameters. If any pollutants are detected in sufficient concentration to upset, interfere or pass through plant operations, the type of pollutant(s) and potential source(s) shall be noted, along with a plan of action to control, eliminate, and/or monitor the pollutant(s). Any apparent generation and/or destruction of pollutants attributable to chlorination/dechlorination sampling and analysis practices shall be noted.

C. Biosolids Monitoring

Biosolids should be sampled in a manner that will be representative of the biosolids generated from the influent and effluent monitoring events except as noted in (3. below. The same parameters required for influent and effluent analysis shall be included in the biosolids analysis. The biosolids analyzed shall be a composite sample of the biosolids for final disposal consisting of:

1. Biosolids lagoons – 20 grab samples collected at representative equidistant intervals (grid pattern) and composited as a single grab, or

2. Dried stockpile – 20 grab samples collected at various representative locations and depths and composited as a single grab, or

3. Dewatered biosolids - daily composite of 4 representative grab samples each day for 5 days taken at equal intervals during the daily operating shift taken from a) the dewatering units or b) each truckload, and shall be combined into a single 5- day composite.

The U.S. EPA manual, POTW Sludge Sampling and Analysis Guidance Document, August 1989, containing detailed sampling protocols specific to biosolids is recommended as a guidance for sampling procedures. The U.S. EPA manual Analytical Methods of the National Sewage Sludge Survey, September 1990, containing detailed analytical protocols specific to biosolids, is recommended as a guidance for analytical methods.

In determining if the biosolids are a hazardous waste, the Discharger shall adhere to Article 2, "Criteria for Identifying the Characteristics of Hazardous Waste," and Article 3, "Characteristics of Hazardous Waste," of Title 22, California Code of Regulations, sections 66261.10 to 66261.24 and all amendments thereto.

The following report elements should be used to submit the biosolids monitoring results. A similarly structured form may be used but will be subject to Regional Water Board approval. The results shall be submitted with the Pretreatment Annual Report identified in Appendix H-1.

- Sampling Procedures and Data Validation (applicable quality assurance/quality control) shall be performed in accordance with the techniques prescribed in 40 C.F.R. 136 and amendments thereto. The Discharger shall make available upon request its biosolids sampling procedures and data validation methods.

- Test Results – Tabulate the test results for the detected parameters and include the percent solids.

- Discussion of Results – Include a complete discussion of test results for the detected parameters. If the detected pollutant(s) is reasonably deemed to have an adverse effect on biosolids disposal, a plan of action to control, eliminate, and/or monitor the pollutant(s) and the known or potential source(s) shall be included. Any apparent generation and/or destruction of pollutants attributable to chlorination/dechlorination sampling and analysis practices shall be noted.

The Discharger shall also provide a summary table presenting any influent, effluent or biosolids monitoring data for non-priority pollutants that the Discharger believes may be causing or contributing to interference, pass through or adversely impacting biosolids quality.

EXHIBIT 6

ORDER No. R2-2013-0029
NPDES No. CA0037664

The following discharger is subject to waste discharge requirements (WDRs) set forth in this Order.

Table 1. Discharger Information

Discharger	City and County of San Francisco
Facility Name	Southeast Water Pollution Control Plant, North Point Wet Weather Facility, Bayside Wet Weather Facilities, and Wastewater Collection System
Facility Address	San Francisco Public Utilities Commission / Wastewater Enterprise 750 Phelps Street San Francisco, CA 94124
CIWQS Place Number	256499

Table 2. Discharge Locations

Discharge Point	Effluent Description	Discharge Point Latitude (North)	Discharge Point Longitude (West)	Receiving Water
Treatment Plant Discharge Points				
001 (Pier 80 Outfall)	Secondary-treated effluent (dry weather); Primary-treated and secondary-treated effluent (wet weathter)	37.749444	-122.372778	Lower San Francisco Bay
002 (Quint Street Outfall)	Secondary-treated effluent (wet weathter)	37.747222	-122.386944	Islais Creek
003 and 004 (Pier 33 Outfall)	Primary-treated effluent (wet weathter)	37.806944	-122.403056	Central San Francisco Bay
005 and 006 (Pier 35 Outfall)	Primary-treated effluent (wet weathter)	37.810000	-122.405556	Central San Francisco Bay
Combined Sewer Discharge Points				
009 (Baker Street Outfall)	Equivalent-to-primary-treated effluent (wet weathter)	37.808056	-122.446667	Marina Beach North Shore Drainage Basin
010 (Pierce Street Outfall)	Equivalent-to-primary-treated effluent (wet weathter)	37.806944	-122.440000	Marina Beach North Shore Drainage Basin
011 (Laguna Street Outfall)	Equivalent-to-primary-treated effluent (wet weathter)	37.811667	-122.43189	Yacht Harbor #2 North Shore Drainage Basin

Discharge Point	Effluent Description	Discharge Point Latitude (North)	Discharge Point Longitude (West)	Receiving Water
013 (Beach Street Outfall)	Equivalent-to-primary-treated effluent (wet weathter)	37.808333	-122.406667	Pier 39 North Shore Drainage Basin
015 (Sansome Street Outfall)	Equivalent-to-primary-treated effluent (wet weathter)	37.806667	-122.403056	Pier 31 North Shore Drainage Basin
017 (Jackson Street Outfall)	Equivalent-to-primary-treated effluent (wet weathter)	37.798333	-122.39472	Pier 3 North Shore Drainage Basin
018 (Howard Street Outfall)	Equivalent-to-primary-treated effluent (wet weathter)	37.793056	-122.390000	Pier 14 Central Drainage Basin
019 (Brannan Street Outfall)	Equivalent-to-primary-treated effluent (wet weathter)	37.785278	-122.373333	Pier 32 Central Drainage Basin
022 (Third Street Outfall)	Equivalent-to-primary-treated effluent (wet weathter)	37.777222	-122.389444	Mission Creek Central Drainage Basin
023 (Fourth Street North Outfall)	Equivalent-to-primary-treated effluent (wet weathter)	37.775556	-122.391389	Mission Creek Central Drainage Basin
024 (Fifth Street North Outfall)	Equivalent-to-primary-treated effluent (wet weathter)	37.773889	-122.393889	Mission Creek Central Drainage Basin
025 (Sixth Street North Outfall)	Equivalent-to-primary-treated effluent (wet weathter)	37.771944	-122.396111	Mission Creek Central Drainage Basin
026 (Division Street Outfall)	Equivalent-to-primary-treated effluent (wet weathter)	37.770278	-122.397500	Mission Creek Central Drainage Basin
027 (Sixth Street South Outfall)	Equivalent-to-primary-treated effluent (wet weathter)	37.771389	-122.395000	Mission Creek Central Drainage Basin
028 (Fourth Street South Outfall)	Equivalent-to-primary-treated effluent (wet weathter)	37.775000	-122.391111	Mission Creek Central Drainage Basin
029 (Mariposa Street Outfall)	Equivalent-to-primary-treated effluent (wet weathter)	37764722	-122.385278	Central Basin Central Drainage Basin
030 (20th Street Outfall)	Equivalent-to-primary-treated effluent (wet weathter)	37.761111	-122.380000	Central Basin Central Drainage Basin
030A (22nd Street Outfall)	Equivalent-to-primary-treated effluent (wet weathter)	37.757778	-122.380278	Central Basin Central Drainage Basin
031 (Third Street North	Equivalent-to-primary-treated effluent (wet weathter)	37.747778	-122.386111	Islais Creek Central Drainage Basin

Discharge Point	Effluent Description	Discharge Point Latitude (North)	Discharge Point Longitude (West)	Receiving Water
031A (Islais Creek North Outfall)	Equivalent-to-primary-treated effluent (wet weathter)	37.747778	-122.387500	Islais Creek Central Drainage Basin
032 (Marin Street Outfall)	Equivalent-to-primary-treated effluent (wet weathter)	37.748611	-122.390833	Islais Creek Central Drainage Basin
033 (Selby Street Outfall)	Equivalent-to-primary-treated effluent (wet weathter)	37.747778	-122.390833	Islais Creek Central Drainage Basin
035 Third Street South Outfall)	Equivalent-to-primary-treated effluent (wet weathter)	37.747222	-122.386111	Islais Creek Central Drainage Basin
037 (Evans Avenue Outfall)	Equivalent-to-primary-treated effluent (wet weathter)	37.735833	-122.373889	India Basin Southeast Drainage Basin
038 (Hudson Avenue Outfall)	Equivalent-to-primary-treated effluent (wet weathter)	37.733333	-122.373839	India Basin Southeast Drainage Basin
040 (Griffith Street South Outfall)	Equivalent-to-primary-treated effluent (wet weathter)	37.723056	-122.382222	Yosemite Creek Southeast Drainage Basin
041 (Yosemite Avenue Outfall)	Equivalent-to-primary-treated effluent (wet weathter)	37.723889	-122.385556	Yosemite Creek Southeast Drainage Basin
042 (Fitch Street Outfall)	Equivalent-to-primary-treated effluent (wet weathter)	37.722222	-122.381944	South Basin Southeast Drainage Basin
043 (Sunnydale Avenue Outfall)	Equivalent-to-primary-treated effluent (wet weathter)	37.747222	-122.386944	Candlestick Cove Southeast Drainage Basin

Table 3. Administrative Information

This Order was adopted on:	August 14, 2013
This Order shall become effective on:	October 1, 2013
This Order shall expire on:	September 30, 2018
The Discharger shall file a Report of Waste Discharge as an application for reissuance of WDRs in accordance with California Code of Regulations, title 23, and an application for reissuance of a National Pollutant Discharge Elimination System (NPDES) permit no later than:	March 30, 2018
The U.S. Environmental Protection Agency (U.S. EPA) and the California Regional Water Quality Control Board, San Francisco Bay Region, have classified this discharge as follows:	Major

I, Bruce H. Wolfe, Executive Officer, do hereby certify that this Order with all attachments is a full, true, and correct copy of the Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on the date indicated above.

_____

Bruce H. Wolfe**,** Executive Officer

Contents

Tables

Attachments

I. FACILITY INFORMATION

Information describing the Southeast Water Pollution Control Plant (Southeast Plant), North Point Wet Weather Facility (North Point Facility), Bayside Wet Weather Facilities, and Wastewater Collection System (collectively, the Facility) is summarized in Table 1 and in Fact Sheet (Attachment F) sections I and II.

II. FINDINGS

The California Regional Water Quality Control Board, San Francisco Bay Region (Regional Water Board), finds:

A. Legal Authorities. This Order serves as WDRs pursuant to California Water Code article 4, chapter 4, division 7 (commencing with § 13260). This Order is also issued pursuant to federal Clean Water Act (CWA) section 402 and implementing regulations adopted by U.S. EPA, and Water Code chapter 5.5, division 7 (commencing with § 13370). It shall serve as an NPDES permit for point source discharges from the Facility to surface waters.

B. Background and Rationale for Requirements. The Regional Water Board developed the requirements in this Order based on information the Discharger submitted as part of its application, information obtained through monitoring and reporting programs, and other available information. The Fact Sheet (Attachment F) contains background information and rationale for the requirements in this Order and is hereby incorporated into and constitutes findings for this Order. Attachments A through E, G, and H are also incorporated into this Order.

C. Provisions and Requirements Implementing State Law. No provisions and requirements in this Order are included to implement State law only.

D. Notification of Interested Parties. The Regional Water Board notified the Discharger and interested agencies and persons of its intent to prescribe these WDRs and provided an opportunity to submit written comments and recommendations. The Fact Sheet provides details regarding the notification.

E. Consideration of Public Comment. The Regional Water Board, in a public meeting, heard and considered all comments pertaining to the discharge. The Fact Sheet provides details regarding the public hearing.

THEREFORE, IT IS HEREBY ORDERED that Order No. R2-2008-0007 (previous order) is rescinded upon the effective date of this Order except for enforcement purposes, and, in order to meet the provisions of Water Code division 7 (commencing with § 13000) and regulations adopted thereunder, and the provisions of the CWA and regulations and guidelines adopted thereunder, the Discharger shall comply with the requirements in this Order. This action in no way prevents the Regional Water Board from taking enforcement action for past violations of the previous order.

III. DISCHARGE PROHIBITIONS

A. Discharge of treated wastewater at a location or in a manner different from that described in this Order is prohibited.

B. Discharge at Discharge Point No. 001 is prohibited when treated wastewater does not receive a dilution of at least 231:1, as modeled. Compliance shall be achieved by proper operation and maintenance of the discharge outfall to ensure that it (or its replacement, in whole or part) is in good working order and is consistent with or can achieve better mixing than that described in Fact Sheet section IV.C.4.a. The Discharger shall address measures taken to ensure this in its application for permit reissuance.

C. The bypass of untreated or partially-treated wastewater to waters of the United States is prohibited, except during wet weather (as defined in Attachment A) and as provided for in the conditions stated in Attachment D section I.G.

D. Except during wet weather, discharges from Discharge Point Nos. 002 through 043 are prohibited.

E. Average dry weather effluent flow in excess of 85.4 MGD is prohibited at Discharge Point No. 001. Average dry weather effluent flow shall be determined from three consecutive dry weather months each year, with compliance measured at Monitoring Location EFF-001A as described in the Monitoring and Reporting Program (MRP).

F. Any sanitary or combined sewer discharge of untreated or partially-treated wastewater to waters of the United States not expressely authorized by this Order is prohibited.

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations—Dry Weather

1. During dry weather, the Discharger shall comply with the following effluent limitations at Discharge Point No. 001, with compliance measured at Monitoring Location EFF-001A as described in the MRP.

Table 4. Effluent Limitations—Dry Weather

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Biochemical Oxygen Demand, 5-day @ 20°C (BOD_5)	mg/L	30	45	---	---	---
Total Suspended Solids (TSS)	mg/L	30	45	---	---	---
Oil and Grease	mg/L	10	---	20	---	---
pH [1]	s.u.	---	---	---	6.0	9.0
Total Residual Chlorine	mg/L	---	---	---	---	0.0 [2]
Copper, Total Recoverable	µg/L	53	---	76	---	---
Cyanide, Total	µg/L	20	---	43	---	---
Dioxin-TEQ	µg/L	1.4×10^{-8}	---	2.8×10^{-8}	---	---
1,2-Diphenylhydrazine	µg/L	5.4	---	11	---	---

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Total Ammonia, as N	mg/L	190	---	290	---	---

Unit Abbreviations:

mg/L = milligrams per liter
µg/L = micrograms per liter
s.u. = standard units
% = percent

Footnotes:

[1] If the Discharger monitors pH continuously, pursuant to 40 C.F.R. section 401.17 the Discharger shall be in compliance with this pH limitation provided that both of the following conditions are satisfied: (i) the total time during which the pH is outside the required range shall not exceed 7 hours and 26 minutes in any calendar month; and (ii) no individual excursion from the required pH range shall exceed 60 minutes.

[2] Effluent residual chlorine concentrations shall be monitored continuously or, at a minimum, every hour. The Discharger shall report for each day the maximum residual chlorine concentration observed following dechlorination using all values measured during that day. However, if monitoring continuously, for the purpose of mandatory minimum penalties required by Water Code section 13385(i), compliance shall be based only on discrete readings from the continuous monitoring every hour on the hour. The Discharger shall retain continuous monitoring readings for at least three years. The Regional Water Board reserves the right to use all continuous monitoring data for discretionary enforcement.

The Discharger may elect to use a continuous on-line monitoring system for measuring or determining that residual dechlorinating agent is present. This monitoring system may be used to prove that anomalous residual chlorine exceedances measured by on-line chlorine analyzers are false positives and are not violations of this total residual chlorine limit because it is chemically improbable to have chlorine present in the presence of sodium bisulfite.

2. **Percent Removal.** During dry weather, the average monthly percent removal of biochemical oxygen demand (BOD_5) and total suspended solids (TSS) at Discharge Point No. 001 shall not be less than 85 percent (i.e., in each calendar month, the arithmetic mean of BOD_5 and TSS, by concentration, for effluent samples collected at Monitoring Location EFF-001A as described in the MRP shall not exceed 15 percent of the arithmetic mean of the BOD_5 and TSS, by concentration, for influent samples collected at Monitoring Location INF-001 as described in the MRP at approximately the same times during the same period).

3. **Bacteria.** Dry weather discharges at Discharge Point No. 001, with compliance measured at Monitoring Location EFF-001A as described in the MRP, shall meet the following limitations:

   a. **Enterococcus.** The geometric mean enterococcus bacteria concentration of all samples in a calendar month shall not exceed 35 most probable number per 100 milliliters (MPN/100 mL).

   b. **Fecal Coliform.** The median fecal coliform density of all samples in any calendar month shall not exceed 500 MPN/100 mL, and no more than 10 percent of the samples in any calendar month shall contain a fecal coliform density equal to or greater than 1,100 MPN/100 mL.

4. **Whole Effluent Acute Toxicity.** During dry weather, discharges at Discharge Point No. 001 shall comply with the following limitations, with compliance measured at Monitoring Location EFF-001A as described in the MRP:

a. An 11-sample median value of not less than 90 percent survival; and

b. An 11-sample 90th percentile value of not less than 70 percent survival.

These acute toxicity limitations are defined as follows:

- **11-sample median.** A bioassay test showing survival of less than 90 percent represents a violation of this effluent limit if five or more of the past ten or fewer bioassay tests also show less than 90 percent survival.

- **11-sample 90th percentile.** A bioassay test showing survival of less than 70 percent represents a violation of this effluent limit if one or more of the past ten or fewer bioassay tests also show less than 70 percent survival.

Bioassays shall be performed using the most up-to-date U.S. EPA protocols and species as specified in the MRP. If these protocols prove unworkable, the Executive Officer and the Environmental Laboratory Accreditation Program may grant exceptions in writing upon the Discharger's request with justification.

If the Discharger can demonstrate that toxicity exceeding the levels cited above is caused by ammonia and that the ammonia in the discharge complies with the ammonia effluent limits in Section IV.A.1 of this Order, then such toxicity does not constitute a violation of this effluent limitation.

5. **Whole Effluent Chronic Toxicity.** During dry weather, discharges at Discharge Point No. 001, with compliance measured at Monitoring Location EFF-001A as described in the MRP, shall not contain chronic toxicity at a level that would cause or contribute to toxicity in the receiving water. Chronic toxicity is a detrimental biological effect on growth rate, reproduction, fertilization success, larval development, or any other relevant measure of the health of an organism population or community. Compliance with this limit shall be determined by analysis of indicator organisms and toxicity tests as described in the MRP.

B. Effluent Limitations—Wet Weather

During wet weather, the Discharger shall comply with the following effluent limitations at Discharge Point Nos. 001 through 006, with compliance measured at Monitoring Locations EFF-001B, EFF-002, and EFF-003 as described in the MRP. Provision VI.C.5 of this Order imposes additional technology-based and water quality-based wet weather requirements.

Table 5. Effluent Limitations—Wet Weather

		Effluent Limitations	
Parameter	**Units**	**Monthly Geometric Mean**	**Instantaneous Maximum**
Total Residual Chlorine	mg/L	---	0.0 [1]
Enterococcus	MPN/100 mL	35 [2]	---

Unit Abbreviation:

mg/L = milligrams per liter

Footnote:

[1] Effluent residual chlorine concentrations shall be monitored continuously or, at a minimum, every hour. The Discharger shall report for each day the maximum residual chlorine concentration observed following dechlorination using all values measured during that day. However, if monitoring continuously, for the purpose of mandatory minimum penalties required by Water Code section 13385(i),

compliance shall be based only on discrete readings from the continuous monitoring every hour on the hour. The Discharger shall retain continuous monitoring readings for at least three years. The Regional Water Board reserves the right to use all continuous monitoring data for discretionary enforcement.

The Discharger may elect to use a continuous on-line monitoring system for measuring or determining that residual dechlorinating agent is present. This monitoring system may be used to prove that anomalous residual chlorine exceedances measured by on-line chlorine analyzers are false positives and are not violations of this total residual chlorine limit because it is chemically improbable to have chlorine present in the presence of sodium bisulfite.

[2] Data from both wet and dry weather shall be included when calculating the geometric mean for compliance with this monthly wet weather limitation. For days with discharge but no sampling, the enterococcus densities shall be assumed to be the same as the densities of the most recent discharge samples. For days with no discharge, enterococcus densities shall be assumed to be 1 MPN/100 mL for calculational purposes.

V. RECEIVING WATER LIMITATIONS

A. The discharge shall not cause the following conditions to exist in receiving waters at any place outside the near-field mixing zone (i.e., where mixing is not controlled by effluent discharge momentum and buoyancy):

1. Floating, suspended, or deposited macroscopic particulate matter or foams;

2. Bottom deposits or aquatic growths to the extent that such deposits or growths cause nuisance or adversely affect beneficial uses;

3. Alteration of temperature, turbidity, or apparent color beyond present natural background levels;

4. Visible, floating, suspended, or deposited oil or other products of petroleum origin; or

5. Toxic or other deleterious substances in concentrations or quantities that cause deleterious effects on wildlife, waterfowl, or other aquatic biota, or render any of these unfit for human consumption, either at levels created in the receiving waters or as a result of biological concentration.

B. The discharge shall not cause the following limits to be exceeded in receiving waters at any place within one foot of the water surface outside the near-field mixing zone (i.e., where mixing is not controlled by effluent discharge momentum and buoyancy):

1.	Dissolved Oxygen	5.0 mg/L, minimum The median dissolved oxygen concentration for any three consecutive months shall not be less than 80% of the dissolved oxygen content at saturation. When natural factors cause concentrations less than that specified above, the discharge shall not cause further reduction in ambient dissolved oxygen concentrations.
2.	Dissolved Sulfide	Natural background levels
3.	pH	The pH shall not be depressed below 6.5 or raised above 8.5. The discharge shall not cause changes greater than 0.5 pH units in normal ambient pH levels.

4. Nutrients — Waters shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses.

C. The discharge shall not cause a violation of any water quality standard for receiving waters adopted by the Regional Water Board or State Water Board as required by the CWA and regulations adopted thereunder (including the *Combined Sewer Overflow (CSO) Control Policy*) outside near-field mixing zones (i.e., where mixing is not controlled by effluent discharge momentum and buoyancy). If more stringent water quality standards are promulgated or approved pursuant to CWA section 303, or amendments thereto, the Regional Water Board may revise or modify this Order in accordance with the more stringent standards.

VI. PROVISIONS

A. Standard Provisions

1. The Discharger shall comply with all "Standard Provisions" in Attachment D.

2. The Discharger shall comply with all applicable provisions of the "Regional Standard Provisions, and Monitoring and Reporting Requirements for NPDES Wastewater Discharge Permits" (Attachment G). Attachment G provisions I.J (Storm Water) and III.A.3.c (Storm Water Monitoring) do not apply.

B. Monitoring and Reporting

The Discharger shall comply with the MRP (Attachment E), and future revisions thereto, and applicable sampling and reporting requirements in Attachments D and G.

C. Special Provisions

1. Reopener Provisions

The Regional Water Board may modify or reopen this Order prior to its expiration date in any of the following circumstances as allowed by law:

a. If present or future investigations demonstrate that the discharges governed by this Order have or will have a reasonable potential to cause or contribute to, or will cease to have, adverse impacts on water quality or beneficial uses of the receiving waters.

b. If new or revised water quality objectives or total maximum daily loads (TMDLs) come into effect for San Francisco Bay and contiguous water bodies (whether statewide, regional, or site-specific). In such cases, effluent limitations in this Order may be modified as necessary to reflect the updated water quality objectives and wasteload allocations in the TMDLs. Adoption of the effluent limitations in this Order is not intended to restrict in any way future modifications based on legally-adopted water quality objectives or TMDLs, or as otherwise permitted under federal regulations governing NPDES permit modifications.

c. If translator, dilution, or other water quality studies provide a basis for determining that a permit condition should be modified.

d. If State Water Board precedential decisions, new policies, new laws, or new regulations are adopted.

e. If an administrative or judicial decision on a separate NPDES permit or waste discharge requirements addresses requirements similar to this discharge.

f. Or as otherwise authorized by law.

The Discharger may request a permit modification based on any of the circumstances above. With any such request, the Discharger shall include antidegradation and anti-backsliding analyses.

With the consent of the Discharger, the Executive Officer may make minor modifications to this Order for the purposes set forth in 40 C.F.R. section 122.63.

2. Effluent Characterization Study and Report

a. Study Elements. The Discharger shall continue to characterize and evaluate the dry weather discharge from the following discharge point to verify that the "no" or "cannot determine" reasonable potential analysis conclusions of this Order remain valid and to inform the next permit reissuance. The Discharger shall collect representative samples at the monitoring stations set forth below, as defined in the MRP, at no less than the frequency specified below:

Discharge Point	Monitoring Station	Minimum Frequency
001	EFF-001A	Once per calendar year

The samples shall be analyzed for the priority pollutants listed in Attachment G, Table C, except for those priority pollutants with effluent limitations where the MRP already requires more frequent monitoring. Compliance with this requirement shall be achieved in accordance with the specifications of Attachment G, sections III.A.1 and III.A.2.

The Discharger shall evaluate on an annual basis if concentrations of any of these priority pollutants significantly increase over past performance. The Discharger shall investigate the cause of any such increase. The investigation may include, but need not be limited to, an increase in monitoring frequency, monitoring of internal process streams, and monitoring of influent sources. The Discharger shall establish remedial measures addressing any increase resulting in reasonable potential to cause or contribute to an exceedance of applicable water quality objectives during dry weather. This requirement may be satisfied through identification of the constituent as a "pollutant of concern" in the Discharger's Pollutant Minimization Program, described in Provision VI.C.3.

b. Reporting Requirements

i. Routine Reporting. The Discharger shall, within 30 days of receipt of analytical results, report the following in the transmittal letter for the appropriate self-monitoring report:

(a) Indication that a sample for this characterization study was collected; and

(b) Identity of priority pollutants detected at or above applicable water quality criteria (see Fact Sheet Table F-9 for the criteria), and the detected concentrations of those pollutants.

ii. Annual Reporting. The Discharger shall summarize the annual data evaluation and source investigation in the annual self-monitoring report.

iii. Final Report. The Discharger shall submit a final report that presents all these data with the application for permit reissuance.

3. Pollutant Minimization Program

a. The Discharger shall continue to improve its existing Pollutant Minimization Program to promote minimization of pollutant loadings to the treatment plant and therefore to the receiving waters.

b. The Discharger shall submit an annual report no later than February 28 each year. Each annual report shall include at least the following information:

i. Brief description of treatment plant. The description shall include the service area and treatment plant processes.

ii. Discussion of current pollutants of concern. Periodically, the Discharger shall analyze its circumstances to determine which pollutants are currently a problem and which pollutants may be potential future problems. This discussion shall include the reasons for choosing the pollutants.

iii. Identification of sources for pollutants of concern. This discussion shall include how the Discharger intends to estimate and identify pollutant sources. The Discharger shall include sources or potential sources not directly within the ability or authority of the Discharger to control, such as pollutants in the potable water supply and air deposition.

iv. Identification of tasks to reduce the sources of pollutants of concern. This discussion shall identify and prioritize tasks to address the Discharger's pollutants of concern. The Discharger may implement the tasks by itself or participate in group, regional, or national tasks that address its pollutants of concern. The Discharger is strongly encouraged to participate in group, regional, or national tasks that address its pollutants of concern whenever it is efficient and appropriate to do so. An implementation timeline shall be included for each task.

v. Outreach to employees. The Discharger shall inform employees about the pollutants of concern, potential sources, and how they might be able to help reduce the discharge of these pollutants of concern into the Facility. The Discharger may provide a forum for employees to provide input.

vi. Continuation of Public Outreach Program. The Discharger shall prepare a pollution prevention public outreach program for its service area. Outreach may

include participation in existing community events, such as county fairs; initiating new community events, such as displays and contests during Pollution Prevention Week; conducting school outreach programs; conducting plant tours; and providing public information in newspaper articles or advertisements, radio or television stories or spots, newsletters, utility bill inserts, or web sites. Information shall be specific to target audiences. The Discharger shall coordinate with other agencies as appropriate.

vii. **Discussion of criteria used to measure Pollutant Minimization Program and task effectiveness.** The Discharger shall establish criteria to evaluate the effectiveness of its Pollutant Minimization Program. This discussion shall idenify the specific criteria used to measure the effectiveness of each task in Provisions VI.C.3.b.iii, iv, v, and vi.

viii. **Documentation of efforts and progress.** This discussion shall detail all of the Discharger's Pollutant Minimization Program activities during the reporting year.

ix. **Evaluation of Pollutant Minimization Program and task effectiveness.** This Discharger shall use the criteria established in Provision VI.C.3.b.vii to evaluate the program and task effectiveness.

x. **Identification of specific tasks and timelines for future efforts.** Based on the evaluation, the Discharger shall explain how it intends to continue or change its tasks to more effectively reduce the amount of pollutants flowing to the Facility, and subsequently in its effluent.

c. The Discharger shall develop and conduct a Pollutant Minimization Program as further described below when there is evidence that a priority pollutant is present in the effluent above an effluent limitation (e.g., sample results reported as detected but not quantified [DNQ] when the effluent limitation is less than the method detection limit [MDL], sample results from analytical methods more sensitive than those methods required by this Order, presence of whole effluent toxicity, health advisories for fish consumption, or results of benthic or aquatic organism tissue sampling) and either:

i. A sample result is reported as DNQ and the effluent limitation is less than the Reporting Level (RL); or

ii. A sample result is reported as not detected (ND) and the effluent limitation is less than the MDL using definitions in Attachment A and reporting protocols described in the MRP.

d. If triggered by the reasons set forth in Provision VI.C.3.c, above, the Discharger's Pollutant Minimization Program shall include, but not be limited to, the following actions and submittals:

i. Annual review and semi-annual monitoring of potential sources of the reportable priority pollutants, which may include fish tissue monitoring and other bio-uptake sampling, or alternative measures when source monitoring is unlikely to produce useful analytical data;

ii. Quarterly monitoring for the reportable priority pollutants in the influent to the Facility. The Executive Officer may approve alternative measures when influent monitoring is unlikely to produce useful analytical data;

iii. Submittal of a control strategy designed to proceed toward the goal of maintaining concentrations of the reportable priority pollutants in the effluent at or below the effluent limitation;

iv. Implementation of appropriate cost-effective control measures for the reportable priority pollutants, consistent with the control strategy; and

v. Inclusion of the following specific items within the annual report required by Provision VI.C.3.b above:

(a) All Pollutant Minimization Program monitoring results for the previous year;
(b) List of potential sources of the reportable priority pollutants;
(c) Summary of all actions undertaken pursuant to the control strategy; and
(d) Description of actions to be taken in the following year.

4. Special Provisions for Municipal Facilities

a. Pretreatment Program. The Discharger shall implement and enforce its approved pretreatment program in accordance with federal pretreatment regulations (40 C.F.R. part 403); pretreatment standards promulgated under CWA sections 307(b), 307(c), and 307(d); pretreatment requirements specified under 40 C.F.R. section 122.44(j); and the requirements in Attachment H, "Pretreatment Requirements." The Discharger's responsibilities include, but are not limited to, the following:

i. Enforcement of the National Pretreatment Standards of 40 C.F.R. sections 403.5 and 403.6;

ii. Implementation of its pretreatment program in accordance with legal authorities, policies, procedures, and financial provisions described in the National Pretreatment Program (40 C.F.R. part 403).

iii. Submission of reports to the State Water Board and the Regional Water Board as described in Attachment H.

iv. Evaluation of the need to revise local limits under 40 C.F.R. section 403.5(c)(1) and, within 180 days following the effective date of this Order, submission of a report describing the changes, with a plan and schedule for implementation. To ensure no significant increase in copper discharges, and thus compliance with antidegradation requirements, the Discharger shall not consider eliminating or relaxing local limits for copper.

b. Sludge and Biosolids Management

i. All sludge and biosolids shall be disposed of, managed, or used in a municipal solid waste landfill; through land application; as a Class A compost; through a waste-to-

energy facility or another recognized and approved technology; in a sludge-only landfill; or in a sewage sludge incinerator in accordance with 40 C.F.R. part 503.

ii. Sludge and biosolids treatment, storage, and disposal, or use, shall not create a nuisance, such as objectionable odors or flies, or result in groundwater contamination.

iii. The sludge and biosolids treatment and storage site shall have facilities adequate to divert surface runoff from adjacent areas, to protect site boundaries from erosion and rising sea levels, and to prevent any conditions that would cause drainage from the materials in the storage site. Adequate protection is defined as protection from at least a 100-year storm and the highest possible tidal stage that may occur.

iv. Sludge or biosolids disposed in a municipal solid waste landfill shall meet the requirements of 40 C.F.R. part 258. In the annual self-monitoring report, the Discharger shall provide the amount of sludge or biosolids disposed and indicate the landfill to which it was sent.

v. This Order does not authorize permanent onsite sludge or biosolids storage or disposal. A Report of Waste Discharge shall be filed and the site brought into compliance with all applicable regulations prior to commencement of any such activity.

c. Collection System Management. The Discharger shall properly operate and maintain its entire collection system (see Provision VI.C.5 and Attachment D, section I.D). The Discharger shall report any noncompliance (see Attachment D, sections V.E.1 and V.E.2) and mitigate any discharge from its collection system that violates this Order (see Attachment D, section I.C).

i. Separate Sanitary Sewer System. The *General Waste Discharge Requirements for Wastewater Collection Agencies* (General Collection System WDRs), State Water Board Order 2006-0003 DWQ as amended by State Water Board Order WQ 2008-0002-EXEC, has requirements for operation and maintenance of separate sanitary sewer collection systems and for reporting and mitigating sanitary sewer overflows from the separate sanitary sewer portion of the Discharger's collection system. While the Discharger must comply with both the General Collection System WDRs and this Order, the General Collection System WDRs more clearly and specifically stipulate requirements for operation and maintenance and for reporting and mitigating sanitary sewer overflows. Implementation of the General Collection System WDRs for proper operation and maintenance and mitigation of sanitary sewer overflows will satisfy the corresponding federal NPDES requirements specified in Attachment D (as supplemented by Attachment G). Following the notification and reporting requirements in the General Collection System WDRs will satisfy NPDES the corresponding reporting requirements specified in Attachment D (as supplemented by Attachment G) for sanitary sewer overflows from the separate sanitary sewer portion of the collection system.

ii. Combined Sewer System. For purposes of this Order, a combined sewer system "excursion" is a release or diversion of untreated or partially-treated wastewater from

the combined sewer system that exits the system temporarily and then re-enters it. Excursions are caused by blockages or flow conditions within the publicly-owned portion of the combined sewer system and can occur in public rights of way or on private property. Excursions do not include releases from privately-owned sewer laterals or authorized combined sewer discharges from Discharge Point Nos. 009 through 043.

(a) Excursion Database. By January 1, 2014, the Discharger shall develop and maintain a database containing information about each excursion that occurs within the Southeast Plant's service area. The Discharger may limit these data to excursions occurring within the City and County of San Francisco. The Discharger may, at its option, include information concerning releases from private sewer laterals. The database shall contain the following information for each excursion:

(1) Location, including latitude and longitude, street address (if available), zip code, cross street, and asset number;

(2) Destination (if known), including whether the excursion was fully captured and returned to the combined sewer system and whether any portion of it entered a drainage channel or surface water;

(3) Estimated volume, in gallons, including volume that reached a surface water or drainage channel and volume recovered (all spills to drainage channels or surface waters are subject to MRP section IX.B, which modifies Attachment G section V.E.2);

(4) Date and time excursion was reported to the San Francisco Public Utilities Commission;

(5) Operator arrival date and time;

(6) End date and time of excursion, if known;

(7) Source (e.g., manhole, catch basin, vent trap);

(8) Cause (e.g., mainline blockage, roots, broken pipe);

(9) Corrective actions taken, including steps taken or planned to reduce, eliminate, and prevent reoccurrence;

(10) Parameters for which samples were analyzed and results (if applicable);

(11) Whether the County Health Officer was notified and health warnings were posted (if known);

(12) Whether a beach was affected and, if so, which one (if applicable);

(13) California Emergency Management Agency (CalEMA) control number, and date and time CalEMA was called (if applicable);

(14) Date and time County Health Officer was notified (if applicable).

If the Discharger chooses to include information regarding releases from private sewer laterals, it should also record responsible party contact information, if known.

(b) Routine Reporting. The Discharger shall report any excursion greater than 1,000 gallons, regardless of whether it enters a drainage channel or surface water, to the Regional Water Board and the San Francisco Department of Public Health not later than two hours after becoming aware of the discharge. The Discharger shall make this report as soon as (1) it has knowledge of the excursion, (2) reporting is possible, and (3) a report can be provided without impeding cleanup or other emergency measures. The Discharger shall report excursions by calling the Regional Water Board's spill hotline (currently 510-622-2369) and following standard procedures developed by the San Francisco Public Utilities Commission and the San Francisco Department of Public Health. (Spill to drainage channels or surface waters are subject to MRP section IX.B, which modifies Attachment G section V.E.2.)

(c) Annual Report. The Discharger shall submit a report no later than August 15 each year that compiles and summarizes information from the excursion database for the preceding 12 months ending June 30. Within the report, the Discharger shall review collection system performance, evaluate excursion trends in terms of time and location, summarize actions taken within the preceding year to minimize excursions, and identify specific tasks for the coming year to further minimize excursions.

(d) Record Keeping. The Discharger shall maintain documentation supporting the database records for at least three years following each excursion. The Executive Officer may extend this period if necessary. Documentation shall include, but need not be limited to, work orders and other maintenance records associated with responses and investigations. The Discharger shall make all excursion records available for review upon Regional Water Board staff request.

If the Discharger collects water quality samples for analysis, it shall maintain the following information:

- Date, exact place, and time of sampling or measurement;
- Individual who performed sampling or measurement;
- Date of analysis;
- Individual who performed analysis;
- Analytical technique or method used; and
- Analysis results.

5. Combined Sewer Sytem Controls

The Discharger shall maximize flows to the Southeast Plant and pollutant removal during wet weather in accordance with the Nine Minimum Controls and the Discharger's Long-Term Control Plan.

a. Combined Sewer Operations and Maintenance Plan. The Discharger shall revise and update its *Combined Sewer Operations and Maintenance Plan* as necessary to ensure compliance with the Nine Minimum Controls and the Long-Term Control Plan requirements of the *Combined Sewer Overflow Control Policy*. The Discharger shall submit the updated plan by August 15, 2015, and following any subsequent revision.

b. Nine Minimum Controls. The Discharger shall continue implementing the following controls:

i. Conduct Proper Operations and Maintenance Programs. The Discharger shall implement its *Combined Sewer Operations and Maintenance Plan*, which shall include the elements described below. The Discharger shall operate and maintain the system according to the plan and in accordance with Provision VI.C.4.c.ii of this Order. The Discharger shall maintain records to document plan implementation.

(a) Designate Manager for Combined Sewer Discharges and Overflows. The Discharger shall designate a person to be responsible for the wastewater collection system and serve as the contact person regarding the operation of the combined sewer system. The Discharger shall notify the Regional Water Board within 90 days of the designation of a new contact person.

(b) Inspect and Maintain Combined Sewer System. The Discharger shall properly operate and maintain the collection system and the combined sewer discharge outfalls to reduce the magnitude, frequency, and duration of combined sewer discharges. The Discharger shall perform the following:

- Regularly clean sewers and catch basins, and repair or replace, as necessary, sewers and related equipment;
- Disconnect any illegal connections;
- Inspect and maintain discharge structures, regulators, pumping stations, and tide gates to ensure that they are in good working condition and adjusted to minimize combined sewer discharges, prevent combined sewer overflows, and prevent tidal inflow;
- Inspect each combined sewer discharge outfall at least once per year. The inspection shall include, but not be limited to, entering the regulator structure, if accessible; determining the extent of any structural defect or debris and grit buildup; and removing any debris that may constrict flow, cause blockage, or result in a dry weather combined sewer overflow. For outfalls that are inaccessible, the Discharger may perform a visual check of the discharge pipe to determine whether combined sewer overflows have occurred or could potentially occur during dry weather; and

- Record all inspection results in a maintenance log.

(c) Provide Trained Staff. The Discharger shall provide adequate staff to carry out the operation, maintenance, repair, and testing required to ensure compliance with the terms and conditions of this Order. The Discharger shall provide appropriate training for each staff member.

(d) Allocate Funds for Operation and Maintenance. The Discharger shall allocate adequate funds for operation and maintenance activities.

ii. Maximize Use of Collection System for Storage. The Discharger shall continue to maximize the use of the collection system (i.e., collection system piping, not only the storage/transports) for in-line storage to reduce the magnitude, frequency, and duration of combined sewer discharges.

iii. Review and Modify Pretreatment Program. The Discharger shall continue to implement controls to minimize the impact of non-domestic discharges to its collection system. At three-year intervals, the Discharger shall re-evaluate whether additional modifications to its pretreatment program are feasible or practical. The Discharger shall maintain records to document this evaluation and implementation of controls.

iv. Maximize Flow to Southeast Plant and North Point Facility. The Discharger shall operate the Southeast Plant at maximum treatable flow during wet weather. The Discharger shall ensure that the *Combined Sewer Operation and Maintenance Plan* is implemented to maximize the volume of wastewater treated at the Southeast Plant and the North Point Facility and discharged via deep water outfalls, consistent with the hydraulic capacities of the storage, transport, treatment, and disposal facilities. The Discharger shall report rainfall with the self-monitoring reports the MRP requires.

v. Prohibit Dry Weather Combined Sewer Overflows. Dry weather combined sewer overflows from Discharge Point Nos. 002 through 043 are prohibited. The Discharger shall respond to dry weather combined sewer overflows in accordance with MRP section IX.B, which modifies Attachment G section V.E.2. During any dry weather combined sewer overflow, the Discharger shall inspect the overflow point each day until the overflow stops. The Discharger shall document in the inspection log each combined sewer overflow event, its duration, its cause, and the corrective measures taken.

vi. Control Solid and Floatable Materials in Combined Sewer Discharges. The Discharger shall continue to implement measures to control solid and floatable materials in combined sewer discharges, including the following:

(a) Ensuring that overflow structures are baffled or using other means to reduce the volume of floatable materials in combined sewer discharges, and

(b) Removing solid or floatable materials captured in the storage/transports prior to discharge.

vii. Develop and Implement Pollution Prevention Program. The Discharger shall continue to implement a Pollution Prevention Program focused on reducing the impact of combined sewer discharges and overflows on receiving waters. It shall develop and implement this program in accordance with Provision VI.C.3.

The Discharger shall also continue to implement a street sweeping program and clean catch basins at a frequency sufficient to prevent large accumulations of pollutants and debris.

viii. Notify Public of Combined Sewer Discharges. The Discharger shall continue to implement a public notification plan to inform citizens of when and where combined sewer discharges occur. The plan shall include the following:

(a) A mechanism to alert persons using receiving waters affected by combined sewer discharges for recreation; and

(b) A system to determine the nature and duration of conditions resulting from combined sewer discharges potentially harmful to receiving water users.

Warning signs shall be posted at beach locations where water contact recreation occurs whenever a combined sewer discharge occurs that could affect recreational users at that location. Warning signs shall be posted on the same day as the combined sewer discharge event unless the combined sewer discharge occurs after 4:00 p.m., in which case, signs shall be posted by 8:00 a.m. the next day. The Discharger shall maintain records documenting public notification.

ix. Monitor to Characterize Wet Weather Discharge Impacts and Efficacy of Controls. The Discharger shall continue monitoring wet weather discharges to characterize their impacts and the efficacy of wet weather discharge controls. The monitoring shall build upon the efforts and results the Discharger described in *Special Study: Overflow Impacts and Efficacy of Combined Sewer Overflow Controls for the San Francisco Bayside System, Southeast Water Pollution Control Plant, North Point Wet Weather Facility and Bayside Wet Weather Facilities* (June 29, 2012).

(a) Monitoring Requirements. Compliance with the following monitoring requirements shall be achieved in accordance with the specifications of Attachment D, section III, and Attachment G, sections III.A.1 and III.A.2. Samples shall be composites comprised of individual grab samples collected at equal intervals of no more than one hour for the duration of each discharge event, but not exceeding 24 hours. If an event does not last at least 24-hours, the Discharger shall sample for as long as possible and report the duration.

(1) Southeast Plant and North Point Facility Discharges. When Southeast Plant or North Point Facility discharges occur during wet weather, the Discharger shall collect effluent samples representing Discharge Point Nos. 001 through 006 at Monitoring Locations EFF-001B, EFF-002, and

EFF-003, as defined in the MRP. In addition to the monitoring required in MRP Table E-4, the Discharger shall monitor for the priority pollutants listed in Attachment G, Table C, at least once per year.

(2) Combined Sewer Discharges. The Discharger shall collect effluent samples representing Discharge Point Nos. 009 through 043 at Monitoring Locations CSD-010 through CSD-043, as defined in the MRP. The Discharger shall collect samples at a monitoring location whenever a combined sewer discharge event of at least one hour in duration occurs at that location (and may also collect samples representing shorter events). In addition to the monitoring required in MRP Table E-5, the Discharger shall monitor each sample for the following:

- total suspended solids
- settleable matter
- pH
- metals (arsenic, cadmium, copper, lead, nickel, selenium, silver, and zinc)
- cyanide
- ammonia (total)

The Discharger shall also monitor a combined sewer discharge at Monitoring Location CSD-41 for the remaining priority pollutants listed in Attachment G, Table C, at least once per year.

(3) Shoreline Monitoring. The Discharger shall collect shoreline receiving water grab samples at Monitoring Locations S-202.4, S-202.5, S-210, S-211, S-300.1, S-301.1, and S-301.2, as defined in the MRP. In addition to the monitoring required in MRP Table E-6, the Discharger shall monitor enterococcus and fecal coliform at a frequency sufficient to characterize ambient conditions (e.g., weekly).

(b) Reporting Requirements

(1) Routine Reporting. The Discharger shall, within 60 days of receipt of analytical results, indicate in the transmittal letter for the appropriate self-monitoring report that a sample for this study was collected.

(2) Final Report. The Discharger shall report its findings by September 30, 2017. The report shall include the following:

- All wet weather discharge monitoring data collected, including acute toxicity data (the Discharger shall include data that do not necessarily conform to the test procedures in 40 C.F.R. part 136 and explain these circumstances to provide context for data interpretation);

- All shoreline monitoring data collected and any discharge-related beach closures;

- Updated water contact recreational use surveys, focusing particularly on recreational use following combined sewer discharge events;

- Evaluation of combined sewer discharge control efficacy (e.g., using TSS as a proxy for pollutant removal efficiency); and

- Evaluation of combined sewer discharge impacts (e.g., comparing average and maximum discharge and receiving water monitoring data with water quality objectives, translated as appropriate using available metals translators and water effects ratios).

c. Long-Term Control Plan. The Discharger shall comply with the following provisions, consistent with implementation of its Long-Term Control Plan.

i. The Discharger shall optimize sytem operations to minimize combined sewer discharges and maximize pollutant removal during wet weather.

ii. The Discharger shall capture for treatment, or storage and subsequent treatment, 100 percent of the combined sewage flow collected in the combined sewage system during precipitation events. Captured combined sewage shall be directed to either the Southeast Plant, the North Point Facility, or the storage/transports. All combined sewage captured shall receive a minimum of the following treatment:

(a) Secondary treatment,
(b) Primary treatment, or
(c) Equivalent-to-primary treatment (in storage/transports).

iii. The Discharger shall operate the wet weather facilities as set forth below. If the Discharger can demonstrate (e.g., through modeling conducted as part of its Sewer System Improvement Program) that changes to these operating parameters will result in additional storage or treatment, it may implement such changes. Written acknowledgement that the Executive Officer concurs with the Discharger's demonstration must be obtained prior to implementation.

(a) North Shore Drainage Basin. Activation and operation of the North Point Facility shall depend on rainfall, forecasts, and storage conditions in the North Shore Drainage Basin and the Central Drainage Basin.

- The North Point Facility shall be activated when the level of combined sewage and stormwater in the North Shore Storage/Transport Box is at 200 inches.

- The North Point Facility shall be activated to treat 135 to 145 MGD of combined in-flow within 60 minutes of any combined sewer discharge through Discharge Point Nos. 013 to 017.

- The North Point Facility shall remain operational as long as necessary to minimize the likelihood of storage/transport combined sewer discharges in the Central or Southeast Drainage Basins.

(b) Central Drainage Basin. Activation and operation of the Channel Pump Station shall depend on rainfall, forecasts, and storage conditions in the Central Drainage Basin and the Southeast Drainage Basin.

- The Channel Pump Station shall pump 80 MGD to the Southeast Plant or Southeast Plant influent shall be at 250 MGD (from the Channel and Flynn Pump Stations and the Southeast Plant Lift Station) before there is any storage/transport combined sewer discharge to Mission Creek (Discharge Point Nos. 022 to 027).

- Flow from the Channel Pump Station to the Southeast Plant may be reduced to prevent a combined sewer discharge from the Southeast Drainage Basin storage/transport structures if the flows between the Central Drainage Basin structures and the Southeast Drainage Basin structures (Griffith Pump Station and/or Flynn Pump Station) become unbalanced, e.g., Griffith and/or Flynn storage levels continue to rise while the Southeast Plant is at maximum flow.

- The Mariposa Pump Station shall be operated at design capacity prior to any combined sewer discharge through Discharge Point No. 029.

- The 20th St. Pump Station shall be operated at design capacity prior to any combined sewer discharge through Discharge Point 030 or 030A.

(c) Southeast Drainage Basin. Southeast Plant operation shall depend on rainfall, forecasts, and storage conditions in the Central Drainage Basin and the Southeast Drainage Basin. The Southeast Plant shall have an influent flow of 240 to 250 MGD prior to any combined sewer discharge into Islais Creek from Discharge Point Nos. 031 through 035.

- The Griffith Pump Station shall be operated at design capacity prior to any combined sewer discharge through Discharge Point Nos. 040 through 042. Flows from the Griffith Pump Station to the Southeast Plant may be reduced to maximize storage in the Southeast Drainage Basin if flows between the Central Drainage Basin and the Southeast Drainage Basin become unbalanced (e.g., if unused storage capacity exists in the Southeast Drainage Basin while the Southeast Plant is at maximum flow).

- The Sunnydale Pump Station shall be operated at design capacity prior to any combined sewer discharge through Discharge Point No. 043. Flows from the Sunnydale Pump Station to the Griffith Pump Station may be reduced to maximize storage in the Southeast Drainage Basin if flows between the Central Drainage Basin and the Southeast Drainage Basin become unbalanced (e.g., if unused storage capacity exists in the Southeast Drainage Basin while the Southeast Plant is at maximum flow).

iv. The Discharger shall comply with the following after rains subside:

(a) Treatment at the Southeast Plant and North Point Facility shall continue until North Shore, Central, and Southeast Drainage Basin storage/transports are essentially empty of stormwater flows.

(b) If the National Weather Service predicts a 30 percent or greater chance of rain within the next 24 hours, the following provisions shall apply:

- Pumping shall occur until the wastewater level in the Channel Pump Station Box is between 100 to 150 inches,
- Pumping shall occur until the wastewater level in the North Shore Box is at 100 inches, and
- Pumping shall occur until the Islais Creek storage is essentially empty.

(c) If the National Weather Service predicts a less than 30 percent chance of rain within the next 24 hours, the following provisions shall apply:

- Pumping shall occur until the wastewater level in the Channel Pump Station Box is below 150 inches,
- Pumping shall occur until the wastewater level in the North Shore Box is below 150 inches, and
- Pumping shall occur until the Islais Creek storage is essentially empty.

v. By March 30, 2018, the Discharger shall synthesize and update its Long-Term Control Plan into one document that reflects current circumstances. The synthesis and update shall include the following elements.

(a) The Long-Term Control Plan shall continue to reflect the historical long-term average annual design goals for combined sewer discharges:

- Four combined sewer discharge events along the North Shore (Discharge Point Nos. 009 through 017);
- Ten combined sewer discharge events within the Central Basin (Discharge Point Nos. 018 through 036); and
- One combined sewer discharge event along the Southeast Sector (Discharge Point Nos. 037 through 043).

(b) The Discharger shall set forth operational requirements similar to those listed in Provisions VI.C.5.c.iii and VI.C.5.c.iv, above, to optimize system operations so as to maximize pollutant removal during wet weather and minimize combined sewer discharges.

(c) The Discharger shall set forth additional measures, to the extent technically and economically feasible, to maximize pollutant removal and minimize combined sewer discharges (e.g., implementing and promoting green infrastructure and low impact development that enhances stormwater detention and percolation).

(d) The Discharger shall develop and propose a metric to evaluate the performance of its wet weather disinfection systems for Discharge Point Nos. 001 through 006.

(e) The Discharger shall propose a plan for post-construction compliance monitoring of all wet weather discharges consistent with the *Combined Sewer Overflow Control Policy*.

vi. The Discharger shall submit a report implementing *Combined Sewer Overflow Control Policy* section II.C.3, "Consideration of Sensitive Areas." At a minimum, the Discharger shall explore how it could eliminate or relocate combined sewer discharges that discharge to sensitive areas. The Discharger shall base its assessment on any new or improved techniques (including but not limited to green infrastructure and low impact development) that can reduce, eliminate, or relocate combined sewer discharges from sensitive areas. The Discharger shall submit the report with its application for permit reissuance.

d. If the Executive Officer determines that the Discharger has caused a violation of any water quality standard for receiving waters, the Discharger shall evaluate its Long-Term Control Plan and its Combined Sewer Operations and Maintenance Plan, and submit a report identifying additional measures, considering its financial capabilities, to address the violation. The report shall include information on the technical and economic feasibility of the additional measures. The Discharger shall submit this report within 180 days after the Executive Officer provides notification of the violation, and the Discharger shall begin implementing the additional measures described in the report, as may be modified by the Executive Officer, within 60 days after report submittal.

6. Other Special Provisions

a. Copper Action Plan. The Discharger shall implement pretreatment, source control, and pollution prevention for copper in accordance with the following tasks and time schedule.

Table 6. Copper Action Plan

Task	Compliance Date
1. Review Potential Copper Sources The Discharger shall submit an inventory of potential copper sources to the treatment plant.	*Completed June 2009*
2. Implement Copper Control Program The Discharger shall submit a plan for and begin implementation of a program to reduce copper sources identified in Task 1. The plan shall consists, at a minimum, of the following elements: a. Provide education and outreach to the public (e.g., focus on proper pool and spa maintenance and plumbers' roles in reducing corrosion); b. If corrosion is determined to be a significant copper source, work cooperatively with local water purveyors to reduce and control water	*Completed February 2011*

Task	Compliance Date
corrosivity, as appropriate, and ensure that local plumbing contractors implement best management practices to reduce corrosion in pipes; and c. Educate plumbers, designers, and maintenance contractors for pools and spas to encourage best management practices that minimize copper discharges.	
3. Implement Additional Measures If the Regional Water Board notifies the Discharger that the three-year rolling mean copper concentration in Central or Lower San Francisco Bay exceeds 2.2 µg/L, then within 90 days of the notification, the Discharger shall evaluate the effluent copper concentration trend and, if it is increasing, develop and begin implementation of additional measures to control copper discharges. The Discharger shall report on the progress and effectiveness of actions taken, and provide a schedule for actions to be taken in the next 12 months.	With annual pollution prevention report due February 28 following 90 days after notification
4. Undertake Studies to Reduce Copper Pollutant Impact Uncertainties. The Discharger shall submit an updated study plan and schedule to conduct or cause to be conducted technical studies to investigate possible copper sediment toxicity and to investigate sub-lethal effects on salmonids. Specifically, the Discharger shall include the manner in which the above will be accomplished and describe the studies to be performed with an implementation schedule. To satisfy this requirement, the Discharger may collaborate and conduct these studies as a group.	*Completed January 2011*
5. Report Status of Copper Control Program. The Discharger shall submit an annual report documenting copper control program implementation and addressing the effectiveness of the actions taken, including any additional copper controls required by Task 3 above, and provide a schedule for actions to be taken in the next 12 months. Additionally, the Discharger shall report the findings and results of the studies completed, planned, or in progress under Task 4. Regarding Task 4 studies, dischargers may collaborate and provide this information in a single report to satisfy this requirement for an entire group.	With annual pollution prevention report due February 28 each year

b. Cyanide Action Plan. The Discharger shall implement monitoring and surveillance, pretreatment, source control and pollution prevention for cyanide in accordance with the following tasks and time schedule.

Table 7. Cyanide Action Plan

Task	Compliance Date
1. Review Potential Cyanide Sources The Discharger shall submit an inventory of potential cyanide sources to the treatment plant. If no cyanide sources are identified, Tasks 2 and 3 are not required, unless the Discharger receives a request to discharge detectable levels of cyanide to the sewer. If so, the Discharger shall notify the Executive Officer and implement Tasks 2 and 3.	*Completed June 2008*
2. Implement Cyanide Control Program The Discharger shall submit a plan and begin implementation of a program to minimize cyanide discharges to its treatment plant consisting, at a minimum, of the following elements: a. Inspect each potential source to assess the need to include that source in the control program. b. Inspect contributing sources included in the control program annually.	*Completed February 2011*

Task	Compliance Date
Inspection elements may be based on U.S. EPA guidance, such as Industrial User Inspection and Sampling Manual for POTWs (EPA 831-B-94-01). c. Develop and distribute educational materials to sources and potential sources regarding the need to prevent cyanide discharges. d. Prepare an emergency monitoring and response plan to be implemented if a significant cyanide discharge occurs. For purposes of this Order, a "significant cyanide discharge" is occurring if cyanide is found in the Southeast Plant's influent above 21 µg/L.	
3. Implement Additional Cyanide Control Measures If the Regional Water Board notifies the Discharger that ambient monitoring shows cyanide concentrations are 1.0 µg/L or higher in the main body of San Francisco Bay, then within 90 days of the notification, the Discharger shall commence actions to identify and abate cyanide sources responsible for the elevated ambient concentrations, and shall report on the progress and effectiveness of actions taken, and provide a schedule for actions to be taken in the next 12 months.	With next annual pollution prevention report due February 28 (at least 90 days following notification)
4. Report Status of Cyanide Control Program The Discharger shall submit an annual report documenting cyanide control program implementation and addressing the effectiveness of actions taken, including any additional cyanide controls required by Task 3, above, and provide a schedule for actions to be taken in the next 12 months.	With annual pollution prevention report due February 28 each year

c. Standard Operating Procedures for Resource Recovery. If the Discharger receives hauled-in anaerobically-digestible material for injection into an anaerobic digester, the Discharger shall notify the Regional Water Board and develop and implement Standard Operating Procedures for this activity. The Standard Operating Procedures shall be developed by February 1, 2014, or prior to initiation of hauling. The Standard Operating Procedures shall address material handling, including unloading, screening or other processing prior to anaerobic digestion, and transportation; spill prevention; spill response; avoidance of the introduction of materials that could cause interference, pass through, or upset of the treatment processes; avoidance of prohibited material; vector control; odor control; operation and maintenance; and the disposition of any solid waste segregated from introduction to the digester. The Discharger shall provide training to its staff on the Standard Operating Procedures and shall maintain records for a minimum of three years for each load received, describing the hauler, waste type, and quantity received. In addition, the Discharger shall maintain records for a minimum of three years for the disposition location and quantity of cumulative pre-digestion segregated solid waste hauled offsite.

ATTACHMENT A – DEFINITIONS

Arithmetic Mean (μ)
Also called the average, the sum of measured values divided by the number of samples. For ambient water concentrations, the arithmetic mean is calculated as follows:

Arithmetic mean = $\mu = \Sigma x / n$ where: Σx is the sum of the measured ambient water concentrations, and n is the number of samples.

Average Monthly Effluent Limitation (AMEL)
The highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.

Average Weekly Effluent Limitation (AWEL)
The highest allowable average of daily discharges over a calendar week (Sunday through Saturday), calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week.

Bioaccumulative
Taken up by an organism from its surrounding medium through gill membranes, epithelial tissue, or from food and subsequently concentrated and retained in the body of the organism.

Carcinogenic
Known to cause cancer in living organisms.

Coefficient of Variation
Measure of data variability calculated as the estimated standard deviation divided by the arithmetic mean of the observed values.

Combined Sewer Discharge
Authorized discharge during a wet weather day from an approved combined sewer discharge point. Refer to Table 2 of the Order for a list of approved combined sewer discharge points.

Combined Sewer Discharge Event
Wet weather event that results in an authorized discharge from one or more approved combined sewer discharge points. A discrete combined sewer discharge event is separated by at least six hours from any other combined sewer discharge event. Refer to Table 2 of the Order for a list of approved combined sewer discharge points.

Combined Sewer System Excursion
Release or diversion of untreated or partially treated wastewater from the combined sewer system that exits the system temporarily and then re-enters it. Excursions do not include releases from privately owned sewer laterals, or authorized combined sewer discharges.

Daily Discharge
Either: (1) the total mass of the constituent discharged over the calendar day (12:00 am through 11:59 pm) or any 24-hour period that reasonably represents a calendar day for purposes of sampling (as specified in the permit) for a constituent with limitations expressed in units of mass; or (2) the

unweighted arithmetic mean measurement of the constituent over the day for a constituent with limitations expressed in other units of measurement (e.g., concentration).

The daily discharge may be determined by the analytical results of a composite sample taken over the course of one day (a calendar day or other 24-hour period defined as a day) or by the arithmetic mean of analytical results from one or more grab samples taken over the course of the day.

For composite sampling, if 1 day is defined as a 24-hour period other than a calendar day, the analytical result for the 24-hour period is considered the result for the calendar day in which the 24-hour period ends.

Detected, but Not Quantified (DNQ)
Sample result less than the RL, but greater than or equal to the laboratory's MDL. Sample results reported as DNQ are estimated concentrations.

Dilution Credit
Amount of dilution granted to a discharge in the calculation of a water quality-based effluent limitation, based on the allowance of a specified mixing zone. It is calculated from the dilution ratio or determined by conducting a mixing zone study or modeling the discharge and receiving water.

Dry Weather
Any weather not defined as wet weather (determined on a day-by-day basis).

Effluent Concentration Allowance (ECA)
Value derived from the water quality criterion/objective, dilution credit, and ambient background concentration that is used, in conjunction with the CV for the effluent monitoring data, to calculate a long-term average (LTA) discharge concentration. The ECA has the same meaning as waste load allocation (WLA) as used in U.S. EPA guidance (*Technical Support Document For Water Quality-based Toxics Control*, March 1991, second printing, EPA/505/2-90-001).

Enclosed Bay
Indentation along the coast that encloses an area of oceanic water within a distinct headlands or harbor works. Enclosed bays include all bays where the narrowest distance between the headlands or outermost harbor works is less than 75 percent of the greatest dimension of the enclosed portion of the bay. Enclosed bays include, but are not limited to, Humboldt Bay, Bodega Harbor, Tomales Bay, Drake's Estero, San Francisco Bay, Morro Bay, Los Angeles-Long Beach Harbor, Upper and Lower Newport Bay, Mission Bay, and San Diego Bay. Enclosed bays do not include inland surface waters or ocean waters.

Estimated Chemical Concentration
Concentration that results from the confirmed detection of the substance below the ML value by the analytical method.

Estuaries
Waters, including coastal lagoons, located at the mouths of streams that serve as areas of mixing for fresh and ocean waters. Coastal lagoons and mouths of streams that are temporarily separated from the ocean by sandbars are considered estuaries. Estuarine waters are considered to extend from a bay or the open ocean to a point upstream where there is no significant mixing of fresh water and seawater.

Estuarine waters include, but are not limited to, the Sacramento-San Joaquin Delta, as defined in Water Code section 12220, Suisun Bay, Carquinez Strait downstream to the Carquinez Bridge, and appropriate areas of the Smith, Mad, Eel, Noyo, Russian, Klamath, San Diego, and Otay rivers. Estuaries do not include inland surface waters or ocean waters.

Inland Surface Waters
All surface waters of the state that do not include the ocean, enclosed bays, or estuaries.

Instantaneous Maximum Effluent Limitation
Highest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous maximum limitation).

Instantaneous Minimum Effluent Limitation
Lowest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous minimum limitation).

Maximum Daily Effluent Limitation (MDEL)
Highest allowable daily discharge of a pollutant, over a calendar day (or 24-hour period). For pollutants with limitations expressed in units of mass, the daily discharge is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the daily discharge is calculated as the arithmetic mean measurement of the pollutant over the day.

Median
Middle measurement in a set of data. The median of a set of data is found by first arranging the measurements in order of magnitude (either increasing or decreasing order). If the number of measurements (n) is odd, then the median = $X_{(n+1)/2}$. If n is even, then the median = $(X_{n/2} + X_{(n/2)+1})/2$ (i.e., the midpoint between n/2 and n/2+1).

Method Detection Limit (MDL)
Minimum concentration of a substance that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero, as defined in in 40 C.F.R. part 136, Attachment B, revised as of July 3, 1999.

Minimum Level (ML)
Concentration at which the entire analytical system gives a recognizable signal and acceptable calibration point. The ML is the concentration in a sample that is equivalent to the concentration of the lowest calibration standard analyzed by a specific analytical procedure, assuming that all the method specified sample weights, volumes, and processing steps have been followed.

Mixing Zone
Limited volume of receiving water allocated for mixing with a wastewater discharge where water quality criteria can be exceeded without causing adverse effects to the overall water body.

Not Detected (ND)
Sample results less than the laboratory's MDL.

Persistent Pollutants
Substances for which degradation or decomposition in the environment is nonexistent or very slow.

Pollutant Minimization Program
Program of waste minimization and pollution prevention actions that include, but are not limited to, product substitution, waste stream recycling, alternative waste management methods, and education of the public and businesses. The goal of the Pollutant Minimization Program is to reduce all potential sources of a priority pollutant through pollutant minimization (control) strategies, including pollution prevention measures as appropriate, to maintain the effluent concentration at or below the water quality-based effluent limitation. Pollution prevention measures may be particularly appropriate for persistent bioaccumulative priority pollutants where there is evidence that beneficial uses are being impacted. Cost effectiveness may be considered when establishing the requirements of a Pollutant Minimization Program. The completion and implementation of a Pollution Prevention Plan, if required pursuant to Water Code section 13263.3(d), is considered to fulfill Pollutant Minimization Program requirements.

Pollution Prevention
Any action that causes a net reduction in the use or generation of a hazardous substance or other pollutant that is discharged into water and includes, but is not limited to, input change, operational improvement, production process change, and product reformulation (as defined in Water Code section 13263.3). Pollution prevention does not include actions that merely shift a pollutant in wastewater from one environmental medium to another environmental medium, unless clear environmental benefits of such an approach are identified to the satisfaction of the State Water Board or Regional Water Board.

Reporting Level (RL)
ML (and its associated analytical method) chosen by the Discharger for reporting and compliance determination from the MLs included in this Order, including an additional factor if applicable as discussed herein. The MLs included in this Order correspond to approved analytical methods for reporting a sample result that are selected by the Regional Water Board either from SIP Appendix 4 in accordance with SIP section 2.4.2 or established in accordance with SIP section 2.4.3. The ML is based on the proper application of method-based analytical procedures for sample preparation and the absence of any matrix interferences. Other factors may be applied to the ML depending on the specific sample preparation steps employed. For example, the treatment typically applied in cases where there are matrix-effects is to dilute the sample or sample aliquot by a factor of ten. In such cases, this additional factor must be applied to the ML in the computation of the RL.

Source of Drinking Water
Any water designated as having a municipal or domestic supply (MUN) beneficial use.

Standard Deviation (σ)
Measure of variability calculated as follows:

$$\sigma = (\sum[(x - \mu)^2]/(n - 1))^{0.5}$$

where:

x is the observed value;
μ is the arithmetic mean of the observed values; and
n is the number of samples.

Toxicity Reduction Evaluation (TRE)
Study conducted in a step-wise process designed to identify the causative agents of effluent or ambient toxicity, isolate the sources of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in toxicity. The first steps of the TRE consist of the collection of data relevant to

the toxicity, including additional toxicity testing, and an evaluation of facility operations and maintenance practices, and best management practices. A Toxicity Identification Evaluation (TIE) may be required as part of the TRE, if appropriate. A TIE is a set of procedures to identify the specific chemicals responsible for toxicity. These procedures are performed in three phases (characterization, identification, and confirmation) using aquatic organism toxicity tests.

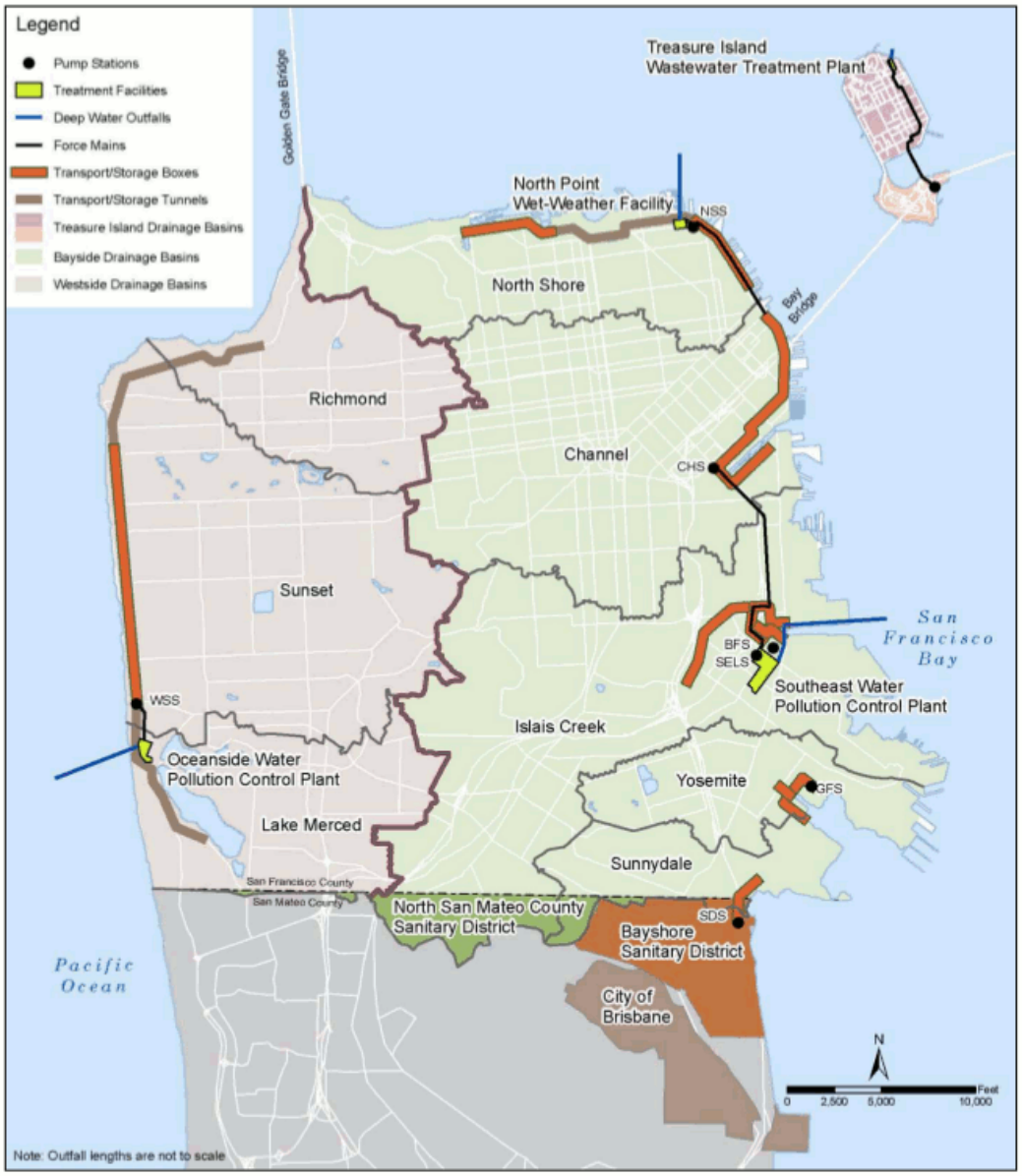
Wet Weather
Weather in which any one of the following conditions exists as a result of rain (determined on a day-by-day basis):

1. Instantaneous influent flow to the Southeast Plant (at Monitoring Location INF-001 as defined in the Monitoring and Reporting Program) exceeds 110 MGD and discharge occurs at Discharge Point No. 002;

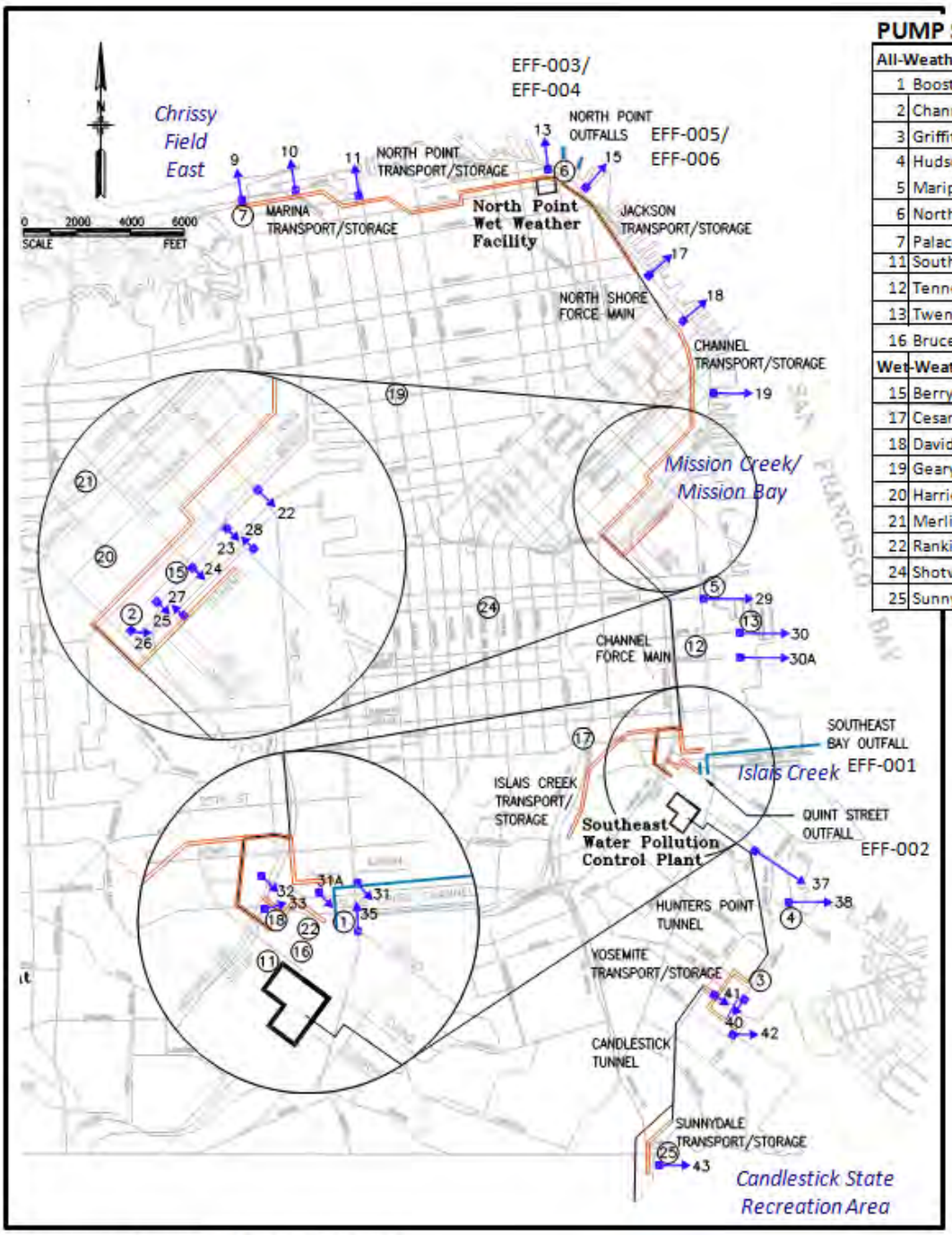
2. Average influent biochemical oxygen demand (BOD_5) or total suspended solids (TSS) concentration at the Southeast Plant is less than 100 mg/L; or

3. North Shore storage/transport wastewater elevation exceeds 100 inches.

ATTACHMENT B – FACILITY MAP



The Facility subject to this Order is shown in the light green (eastern) area of the map and includes the Southeast Water Pollution Control Plant, the North Point Wet Weather Facility, and the Bayside Wet Weather Facilities. The remaining collection system subject to this Order is not shown. The Oceanside Water Pollution Control Plant, Westside Wet Weather Facilities, and Treasure Island Wastewater Treatment Plant are shown only for reference.



PUMP STATIONS

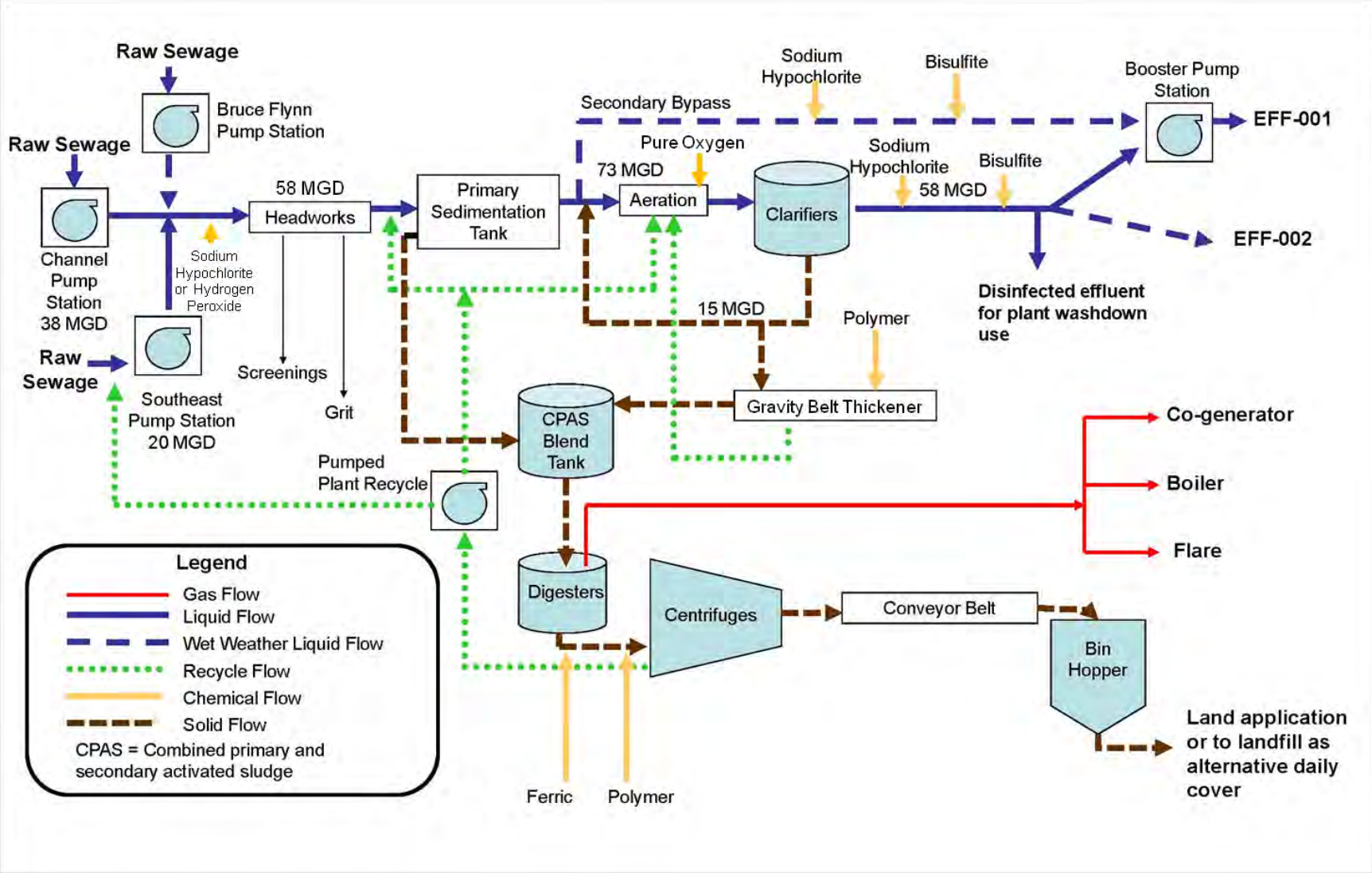
All-Weather Facilities	
1	Booster PS
2	Channel PS
3	Griffith PS
4	Hudson Avenue LS
5	Mariposa PS
6	North Shore PS
7	Palace of Fine Arts PS
11	Southeast LS
12	Tennessee PS
13	Twentieth Street LS
16	Bruce Flynn PS
Wet-Weather Facilities	
15	Berry PS
17	Cesar Chavez PS
18	Davidson Wet-Weather PS
19	Geary Underpass LS
20	Harriet Lucerne (WW) PS
21	Merlin/Morris PS
22	Rankin Wet-Weather PS
24	Shotwell PS
25	Sunnydale PS

PS = Pump Station
LS = Lift Station

COMBINED SEWER DISCHARGE POINTS

North Shore Area		Central Basin		Central Basin (cont'd)		Southeast Sector	
009	Baker Street	018	Howard Street	029	Mariposa Street	037	Evans Avenue
010	Pierce Street	019	Brannan Street	030	20th Street	38	Hudson Avenue
011	Laguna Street	022	Third Street	030a	22nd Street	040	Griffith Street South
013	Beach Street	023	Fourth Street North	031	Third Street North	041	Yosemite Avenue
015	Sansome Street	024	Fifth Street North	031A	Islais Creek North	042	Fitch Street
017	Jackson Street	025	Sixth Street North	032	Marin Street	043	Sunnydale Avenue
		026	Division Street	033	Selby Street		
		027	Sixth Street South	035	Third Street South		
		028	Fourth Street South				

ATTACHMENT C – PROCESS FLOW DIAGRAM



ATTACHMENT D –STANDARD PROVISIONS

I. STANDARD PROVISIONS – PERMIT COMPLIANCE

A. Duty to Comply

1. The Discharger must comply with all of the conditions of this Order. Any noncompliance constitutes a violation of the Clean Water Act (CWA) and the California Water Code and is grounds for enforcement action, for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application. (40 C.F.R. § 122.41(a).)

2. The Discharger shall comply with effluent standards or prohibitions established under CWA section 307(a) for toxic pollutants and with standards for sewage sludge use or disposal established under CWA section 405(d) within the time provided in the regulations that establish these standards or prohibitions, even if this Order has not yet been modified to incorporate the requirement. (40 C.F.R. § 122.41(a)(1).)

B. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for a Discharger in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this Order. (40 C.F.R. § 122.41(c).)

C. Duty to Mitigate

The Discharger shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this Order that has a reasonable likelihood of adversely affecting human health or the environment. (40 C.F.R. § 122.41(d).)

D. Proper Operation and Maintenance

The Discharger shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Discharger to achieve compliance with the conditions of this Order. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems that are installed by a Discharger only when necessary to achieve compliance with the conditions of this Order. (40 C.F.R. § 122.41(e).)

E. Property Rights

1. This Order does not convey any property rights of any sort or any exclusive privileges. (40 C.F.R. § 122.41(g).)

2. The issuance of this Order does not authorize any injury to persons or property or invasion of other private rights, or any infringement of state or local law or regulations. (40 C.F.R. § 122.5(c).)

F. Inspection and Entry

The Discharger shall allow the Regional Water Board, State Water Board, U.S. EPA, or their authorized representatives (including an authorized contractor acting as their representative), upon the presentation of credentials and other documents, as may be required by law, to (40 C.F.R. § 122.41(i); Wat. Code, § 13383):

1. Enter upon the Discharger's premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this Order (40 C.F.R. § 122.41(i)(1));

2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order (40 C.F.R. § 122.41(i)(2));

3. Inspect and photograph, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order (40 C.F.R. § 122.41(i)(3)); and

4. Sample or monitor, at reasonable times, for the purposes of assuring Order compliance or as otherwise authorized by the CWA or the Water Code, any substances or parameters at any location. (40 C.F.R. § 122.41(i)(4).)

G. Bypass

1. Definitions

a. "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility. (40 C.F.R. § 122.41(m)(1)(i).)

b. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities, which causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production. (40 C.F.R. § 122.41(m)(1)(ii).)

2. **Bypass not exceeding limitations.** The Discharger may allow any bypass to occur which does not cause exceedances of effluent limitations, but only if it is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions listed in Standard Provisions – Permit Compliance I.G.3, I.G.4, and I.G.5 below. (40 C.F.R. § 122.41(m)(2).)

3. **Prohibition of bypass.** Bypass is prohibited, and the Regional Water Board may take enforcement action against a Discharger for bypass, unless (40 C.F.R. § 122.41(m)(4)(i)):

a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage (40 C.F.R. § 122.41(m)(4)(i)(A));

b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of

equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventive maintenance (40 C.F.R. § 122.41(m)(4)(i)(B)); and

c. The Discharger submitted notice to the Regional Water Board as required under Standard Provisions – Permit Compliance I.G.5 below. (40 C.F.R. § 122.41(m)(4)(i)(C).)

4. Approval. The Regional Water Board may approve an anticipated bypass, after considering its adverse effects, if the Regional Water Board determines that it will meet the three conditions listed in Standard Provisions—Permit Compliance I.G.3 above. (40 C.F.R. § 122.41(m)(4)(ii).)

5. Notice

a. Anticipated bypass. If the Discharger knows in advance of the need for a bypass, it shall submit a notice, if possible at least 10 days before the date of the bypass. (40 C.F.R. § 122.41(m)(3)(i).)

b. Unanticipated bypass. The Discharger shall submit notice of an unanticipated bypass as required in Standard Provisions - Reporting V.E below (24-hour notice). (40 C.F.R. § 122.41(m)(3)(ii).)

H. Upset

Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the Discharger. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation. (40 C.F.R. § 122.41(n)(1).)

1. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of Standard Provisions – Permit Compliance I.H.2 below are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review. (40 C.F.R. § 122.41(n)(2).)

2. Conditions necessary for a demonstration of upset. A Discharger who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence that (40 C.F.R. § 122.41(n)(3)):

a. An upset occurred and that the Discharger can identify the cause(s) of the upset (40 C.F.R. § 122.41(n)(3)(i));

b. The permitted facility was, at the time, being properly operated (40 C.F.R. § 122.41(n)(3)(ii));

c. The Discharger submitted notice of the upset as required in Standard Provisions—Reporting V.E.2.b below (24-hour notice) (40 C.F.R. § 122.41(n)(3)(iii)); and

d. The Discharger complied with any remedial measures required under Standard Provisions—Permit Compliance I.C above. (40 C.F.R. § 122.41(n)(3)(iv).)

3. **Burden of proof.** In any enforcement proceeding, the Discharger seeking to establish the occurrence of an upset has the burden of proof. (40 C.F.R. § 122.41(n)(4).)

II. STANDARD PROVISIONS—PERMIT ACTION

A. General

This Order may be modified, revoked and reissued, or terminated for cause. The filing of a request by the Discharger for modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any Order condition. (40 C.F.R. § 122.41(f).)

B. Duty to Reapply

If the Discharger wishes to continue an activity regulated by this Order after the expiration date of this Order, the Discharger must apply for and obtain a new permit. (40 C.F.R. § 122.41(b).)

C. Transfers

This Order is not transferable to any person except after notice to the Regional Water Board. The Regional Water Board may require modification or revocation and reissuance of the Order to change the name of the Discharger and incorporate such other requirements as may be necessary under the CWA and the Water Code. (40 C.F.R. § 122.41(l)(3); § 122.61.)

III. STANDARD PROVISIONS – MONITORING

A. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. (40 C.F.R. § 122.41(j)(1).)

B. Monitoring results must be conducted according to test procedures under 40 C.F.R. part 136 or, in the case of sludge use or disposal, approved under 40 C.F.R. part 136 unless otherwise specified in 40 C.F.R. part 503 unless other test procedures have been specified in this Order. (40 C.F.R. § 122.41(j)(4); § 122.44(i)(1)(iv).)

IV. STANDARD PROVISIONS—RECORDS

A. Except for records of monitoring information required by this Order related to the Discharger's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 C.F.R. part 503), the Discharger shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order, for a period of at least three (3) years

from the date of the sample, measurement, report or application. This period may be extended by request of the Regional Water Board Executive Officer at any time. (40 C.F.R. § 122.41(j)(2).)

B. Records of monitoring information shall include the following:

1. The date, exact place, and time of sampling or measurements (40 C.F.R. § 122.41(j)(3)(i));

2. The individual(s) who performed the sampling or measurements (40 C.F.R. § 122.41(j)(3)(ii));

3. The date(s) the analyses were performed (40 C.F.R. § 122.41(j)(3)(iii));

4. The individual(s) who performed the analyses (40 C.F.R. § 122.41(j)(3)(iv));

5. The analytical techniques or methods used (40 C.F.R. § 122.41(j)(3)(v)); and

6. The results of such analyses. (40 C.F.R. § 122.41(j)(3)(vi).)

C. Claims of confidentiality for the following information will be denied (40 C.F.R. § 122.7(b)):

1. The name and address of any permit applicant or Discharger (40 C.F.R. § 122.7(b)(1)); and

2. Permit applications and attachments, permits, and effluent data. (40 C.F.R. § 122.7(b)(2).)

V. STANDARD PROVISIONS—REPORTING

A. Duty to Provide Information

The Discharger shall furnish to the Regional Water Board, State Water Board, or U.S. EPA within a reasonable time, any information which the Regional Water Board, State Water Board, or U.S. EPA may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order or to determine compliance with this Order. Upon request, the Discharger shall also furnish to the Regional Water Board, State Water Board, or U.S. EPA copies of records required to be kept by this Order. (40 C.F.R. § 122.41(h); Wat. Code, § 13267.)

B. Signatory and Certification Requirements

1. All applications, reports, or information submitted to the Regional Water Board, State Water Board, and/or U.S. EPA shall be signed and certified in accordance with Standard Provisions—Reporting V.B.2, V.B.3, V.B.4, and V.B.5 below. (40 C.F.R. § 122.41(k).)

2. For a corporation, all permit applications shall be signed by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means: (i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and

regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures. (40 C.F.R. § 122.22(a)(1).)

For a partnership or sole proprietorship, all permit applications shall be signed by a general partner or the proprietor, respectively. (40 C.F.R. § 122.22(a)(2).)

For a municipality, state, federal, or other public agency, all permit applications shall be signed by either a principal executive officer or ranking elected official. For purposes of this provision, a principal executive officer of a federal agency includes (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of U.S. EPA). (40 C.F.R. § 122.22(a)(3).).

3. All reports required by this Order and other information requested by the Regional Water Board, State Water Board, or U.S. EPA shall be signed by a person described in Standard Provisions – Reporting V.B.2 above, or by a duly authorized representative of that person. A person is a duly authorized representative only if:

a. The authorization is made in writing by a person described in Standard Provisions—Reporting V.B.2 above (40 C.F.R. § 122.22(b)(1));

b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.) (40 C.F.R. § 122.22(b)(2)); and

c. The written authorization is submitted to the Regional Water Board and State Water Board. (40 C.F.R. § 122.22(b)(3).)

4. If an authorization under Standard Provisions – Reporting V.B.3 above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Standard Provisions—Reporting V.B.3 above must be submitted to the Regional Water Board and State Water Board prior to or together with any reports, information, or applications, to be signed by an authorized representative. (40 C.F.R. § 122.22(c).)

5. Any person signing a document under Standard Provisions—Reporting V.B.2 or V.B.3 above shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly

responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations." (40 C.F.R. § 122.22(d).)

C. Monitoring Reports

1. Monitoring results shall be reported at the intervals specified in the Monitoring and Reporting Program in this Order. (40 C.F.R. § 122.22(l)(4).)

2. Monitoring results must be reported on a Discharge Monitoring Report (DMR) form or forms provided or specified by the Regional Water Board or State Water Board for reporting results of monitoring of sludge use or disposal practices. (40 C.F.R. § 122.41(l)(4)(i).)

3. If the Discharger monitors any pollutant more frequently than required by this Order using test procedures approved under 40 C.F.R. part 136, or another method required for an industry-specific waste stream under 40 C.F.R. subchapters N or O, the results of such monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Regional Water Board. (40 C.F.R. § 122.41(l)(4)(ii).)

4. Calculations for all limitations, which require averaging of measurements, shall utilize an arithmetic mean unless otherwise specified in this Order. (40 C.F.R. § 122.41(l)(4)(iii).)

D. Compliance Schedules

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this Order, shall be submitted no later than 14 days following each schedule date. (40 C.F.R. § 122.41(l)(5).)

E. Twenty-Four Hour Reporting

1. The Discharger shall report any noncompliance that may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the Discharger becomes aware of the circumstances. A written submission shall also be provided within five (5) days of the time the Discharger becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. (40 C.F.R. § 122.41(l)(6)(i).)

2. The following shall be included as information that must be reported within 24 hours under this paragraph (40 C.F.R. § 122.41(l)(6)(ii)):

a. Any unanticipated bypass that exceeds any effluent limitation in this Order. (40 C.F.R. § 122.41(l)(6)(ii)(A).)

b. Any upset that exceeds any effluent limitation in this Order. (40 C.F.R. § 122.41(l)(6)(ii)(B).)

3. The Regional Water Board may waive the above-required written report under this provision on a case-by-case basis if an oral report has been received within 24 hours. (40 C.F.R. § 122.41(l)(6)(iii).)

F. Planned Changes

The Discharger shall give notice to the Regional Water Board as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required under this provision only when (40 C.F.R. § 122.41(l)(1)):

1. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 C.F.R. section 122.29(b) (40 C.F.R. § 122.41(l)(1)(i)); or

2. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are not subject to effluent limitations in this Order. (Alternatively, for an existing manufacturing, commercial, mining, or silvicultural discharge as referenced in 40 C.F.R. section 122.42(a), this notification applies to pollutants that are subject neither to effluent limitations in this Order nor to notification requirements under 40 C.F.R. section 122.42(a)(1) (see Additional Provisions—Notification Levels VII.A.1).) (40 C.F.R. § 122.41(l)(1)(ii).)

3. The alteration or addition results in a significant change in the Discharger's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan. (40 C.F.R. § 122.41(l)(1)(iii).)

G. Anticipated Noncompliance

The Discharger shall give advance notice to the Regional Water Board or State Water Board of any planned changes in the permitted facility or activity that may result in noncompliance with this Order's requirements. (40 C.F.R. § 122.41(l)(2).)

H. Other Noncompliance

The Discharger shall report all instances of noncompliance not reported under Standard Provisions—Reporting V.C, V.D, and V.E above at the time monitoring reports are submitted. The reports shall contain the information listed in Standard Provision—Reporting V.E above. (40 C.F.R. § 122.41(l)(7).)

I. Other Information

When the Discharger becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the

Regional Water Board, State Water Board, or U.S. EPA, the Discharger shall promptly submit such facts or information. (40 C.F.R. § 122.41(l)(8).)

VI. STANDARD PROVISIONS – ENFORCEMENT

A. The Regional Water Board is authorized to enforce the terms of this Order under several provisions of the Water Code, including, but not limited to, sections 13385, 13386, and 13387.

VII. ADDITIONAL PROVISIONS—NOTIFICATION LEVELS

A. Non-Municipal Facilities

Existing manufacturing, commercial, mining, and silvicultural Dischargers shall notify the Regional Water Board as soon as they know or have reason to believe (40 C.F.R. § 122.42(a)):

1. That any activity has occurred or will occur that would result in the discharge, on a routine or frequent basis, of any toxic pollutant that is not limited in this Order, if that discharge will exceed the highest of the following "notification levels" (40 C.F.R. § 122.42(a)(1)):

a. 100 micrograms per liter (µg/L) (40 C.F.R. § 122.42(a)(1)(i));

b. 200 µg/L for acrolein and acrylonitrile; 500 µg/L for 2,4-dinitrophenol and 2-methyl-4,6-dinitrophenol; and 1 milligram per liter (mg/L) for antimony (40 C.F.R. § 122.42(a)(1)(ii));

c. Five (5) times the maximum concentration value reported for that pollutant in the Report of Waste Discharge (40 C.F.R. § 122.42(a)(1)(iii)); or

d. The level established by the Regional Water Board in accordance with section 122.44(f). (40 C.F.R. § 122.42(a)(1)(iv).)

2. That any activity has occurred or will occur that would result in the discharge, on a non-routine or infrequent basis, of any toxic pollutant that is not limited in this Order, if that discharge will exceed the highest of the following "notification levels" (40 C.F.R. § 122.42(a)(2)):

a. 500 micrograms per liter (µg/L) (40 C.F.R. § 122.42(a)(2)(i));

b. 1 milligram per liter (mg/L) for antimony (40 C.F.R. § 122.42(a)(2)(ii));

c. Ten (10) times the maximum concentration value reported for that pollutant in the Report of Waste Discharge (40 C.F.R. § 122.42(a)(2)(iii)); or

d. The level established by the Regional Water Board in accordance with section 122.44(f). (40 C.F.R. § 122.42(a)(2)(iv).)

B. Publicly-Owned Treatment Works (POTWs)

All POTWs shall provide adequate notice to the Regional Water Board of the following (40 C.F.R. § 122.42(b)):

1. Any new introduction of pollutants into the POTW from an indirect discharger that would be subject to CWA sections 301 or 306 if it were directly discharging those pollutants (40 C.F.R. § 122.42(b)(1)); and

2. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of adoption of this Order. (40 C.F.R. § 122.42(b)(2).)

3. Adequate notice shall include information on the quality and quantity of effluent introduced into the POTW as well as any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW. (40 C.F.R. § 122.42(b)(3).)

ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)

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ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)

The Code of Federal Regulations (40 C.F.R. § 122.48) requires that all NPDES permits specify monitoring and reporting requirements. Water Code sections 13267 and 13383 also authorize the Regional Water Board to require technical and monitoring reports. This MRP establishes monitoring and reporting requirements that implement federal and State regulations.

I. GENERAL MONITORING PROVISIONS

A. The Discharger shall comply with this MRP. The Executive Officer may amend this MRP pursuant to 40 C.F.R. sections 122.62, 122.63, and 124.5. If any discrepancies exist between this MRP and the "Regional Standard Provisions, and Monitoring and Reporting Requirements (Supplement to Attachment D) for NPDES Wastewater Discharge Permits" (Attachment G), this MRP shall prevail.

B. The Discharger shall conduct all monitoring in accordance with Attachment D, section III, as supplemented by Attachment G. Equivalent test methods must be more sensitive than those specified in 40 C.F.R. section 136 and must be specified in this permit.

II. MONITORING LOCATIONS

The Discharger shall establish the following monitoring locations to demonstrate compliance with the effluent limitations, discharge specifications, and other requirements in this Order:

Table E-1. Monitoring Locations

Type of Sampling Location	Monitoring Location Name	Monitoring Location Description [1]
Influent	INF-001	Any point at the Southeast Plant upstream of the primary sedimentation basins at which all waste tributary to the treatment system is present, and preceding any phase of treatment. *Latitude 37.744611 Longitude -122.392111*
Influent	INF-002	Any point at the North Point Facility upstream of the primary sedimentation basins at which all waste tributary to the treatment system is present, and preceding any phase of treatment. *Latitude 37.806333 Longitude -122.409389*
Effluent	EFF-001A	During dry weather, any point at the Southeast Plant between the point at which all wastes have gone through complete secondary treatment, including disinfection, and Discharge Point No. 001 (deep water outfall). *Latitude 37.743611 Longitude -122.390000*
Effluent	EFF-001B	During wet weather, any point at the Southeast Plant at which adequate disinfection is assured and Discharge Point No. 001 (deep water outfall) (may be the same as Monitoring Location EFF-001A). *Latitude 37.743611 Longitude -122.390000*
Effluent	EFF-002	During wet weather, any point at the Southeast Plant between the point at which all wastes have gone through complete secondary treatment, including disinfection, and Discharge Point No. 002 (Islais Creek outfall). *Latitude 37.746944 Longitude -122.388056*

Type of Sampling Location	Monitoring Location Name	Monitoring Location Description [1]
Effluent	EFF-003	During wet weather, any point at the North Point Facility between Discharge Point Nos. 003 and 004 (Pier 33 outfalls) and 005 and 006 (Pier 35 outfalls) and the point at which all waste tributary to those outfalls is present and adequate disinfection is assured. *Latitude 37.806667 Longitude -122.407500*
Combined Sewer Discharge	CSD-010	During wet weather, any point between Discharge Point No. 010 (Pierce Street outfall) and the point at which all waste tributary to the outfall is present. *Latitude 37.806944 Longitude -122.440000*
Combined Sewer Discharge	CSD-025	During wet weather, any point between Discharge Point No. 025 (Sixth Street North outfall) and the point at which all waste tributary to the outfall is present. *Latitude 37.071944 Longitude -122.396111*
Combined Sewer Discharge	CSD-029	During wet weather, any point between Discharge Point No. 029 (Mariposa Street outfall) and the point at which all waste tributary to the outfall is present. *Latitude 37.764722 Longitude -122.385278*
Combined Sewer Discharge	CSD-031A	During wet weather, any point between Discharge Point No. 031A (North Islais North outfall) and the point at which all waste tributary to the outfall is present. *Latitude 37.747778 Longitude -122.387500*
Combined Sewer Discharge	CSD-041	During wet weather, any point between Discharge Point Nos. 041 or 042 (Yosemite Avenue or Fitch Street outfalls) and the point at which all waste tributary to the outfalls is present. *Latitude 37.723889 Longitude -122.381389* or *Latitude 37.722222 Longitude -122.381389*
Combined Sewer Discharge	CSD-043	During wet weather, any point between Discharge Point No. 043 (Sunnydale Avenue outfall) and the point at which all waste tributary to the outfall is present. *Latitude 37.747222 Longitude -122.386944*
Shoreline	S-202.5	Crissy Field West *Latitude 37.811667 Longitude -122.490000*
Shoreline	S-202.4	Crissy Field (east of Lagoon) *Latitude 37.810278 Longitude -122.452778*
Shoreline	S-210.1	Aquatic Park (Hyde St. Pier) *Latitude 37.8150DW00 Longitude -122.425833*
Shoreline	S-211	Aquatic Park Beach East End *Latitude 37.814722 Longitude -122.424167*
Shoreline	S-300.1	Candlestick Point SRA (Sunnydale Cove Beach) *Latitude 37.715833 Longitude -122.394167*
Shoreline	S-301.1	Candlestick Point SRA (Windsurfer Circle) *Latitude 37.715278 Longitude -122.366607*
Shoreline	S-301.2	Candlestick Point SRA (Jack Rabbit Beach) *Latitude 37.718611 Longitude -122.366667*
Biosolids	BIO-001	Biosolids (treated sludge)

Footnote:

[1] Latitude and longitude information is approximate for administrative purposes.

III. INFLUENT MONITORING REQUIREMENTS

The Discharger shall monitor Southeast Plant influent at Monitoring Location INF-001 as follows. Only flow monitoring is required during wet weather.

Table E-2. Influent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow [1]	MGD	Continuous	Continuous/D [3]
Biochemical Oxygen Demand (5-day @ 20°C)(BOD_5)	mg/L	C-24	1/Week [3]
Total Suspended Solids (TSS)	mg/L	C-24	5/Week [3]
Cyanide, Total [2]	µg/L	Grab	1/Month [3]

Unit Abbreviations:

MGD = million gallons per day
MG = million gallons
mg/L = milligrams per liter
µg/L = micrograms per liter

Sample Type:

Continuous = measured continuously
C-24 = 24-hour composite sample
Grab = Grab sample

Sampling Frequency:

Continuous/D = measured continuously, and recorded and reported daily
1/Week = once per week
5/Week = five times per week
1/Month = once per month

Footnotes:

[1] Flow shall be monitored continuously and the following information shall be reported in monthly self-monitoring reports:
- Daily average flow (MGD)
- Monthly average flow (MGD)
- Total monthly flow volume (MG)
- Maximum and minimum daily average flow rates (MGD)

[2] Influent cyanide monitoring may be used to satisfy the pretreatment monitoring requirements in Table E-7.

[3] BOD_5, TSS, and total cyanide monitoring is required only during dry weather.

IV. EFFLUENT MONITORING REQUIREMENTS

A. Dry Weather

During dry weather, the Discharger shall monitor Southeast Plant effluent at Monitoring Location EFF-001A as follows:

Table E-3. Effluent Monitoring — Dry Weather

Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow [1]	MGD	Continuous	Continuous/D
BOD_5	mg/L	C-24	1/Week [2]
TSS	mg/L	C-24	5/Week
Chemical Oxygen Demand (COD)	mg/L	C-24	5/Week [2]
Oil and Grease [3]	mg/L	Grab	1/Month

Parameter	Units	Sample Type	Minimum Sampling Frequency
pH [4]	standard units	Continuous or Grab	Continuous or 5/Week
Enterococcus [9]	MPN/100 mL	Grab	4/Year [8]
Fecal Coliform [9]	MPN/100 mL	Grab	1/Week
Total Residual Chlorine [5]	mg/L	Continuous or Grab	Continuous/H or 1/Hour
Acute Toxicity [6]	% Survival	Flow through	1/Month
Chronic Toxicity [7]	TUc	C-24	2/Year
Ammonia, Total	mg/L as N	Grab or C-24	1/Month
Copper, Total Recoverable	µg/L	C-24	1/Month
Cyanide, Total	µg/L	Grab	1/Month
Dioxin-TEQ	µg/L	Grab	2/Year
1,2-Diphenylhydrazine	µg/L	Grab	1/Month

Unit Abbreviations:

MGD = million gallons per day
mg/L = milligrams per liter
mg/L as N = milligrams per liter as nitrogen
MPN/100 mL = most probable number per 100 milliliters
TUc = chronic toxicity units, equal to 100/NOEL, where NOEL = IC_{25}, EC_{25}, or NOEC
µg/L = micrograms per liter

Sample Type:

Continuous = measured continuously
C-24 = 24-hour composite sample
Grab = grab sample

Sampling Frequency:

Continuous/H = measured continuously, and recorded and reported hourly
Continuous/D = measured continuously, and recorded and reported daily
1/Hour = once per hour
1/Week = once per week
3/Week = three times per week
5/Week = five times per week
1/Month = once per month
5/Month = five times per month
2/Year = twice per year
4/Year = four times per year

Footnotes:

[1] Flow shall be monitored continuously and the following information shall be reported in monthly self-monitoring reports:
- Daily average flow (MGD)
- Monthly average flow (MGD)
- Total monthly flow volume (MG)
- Maximum and minimum daily average flow rates (MGD)

[2] If the COD concentration exceeds 75 mg/L on two consecutive days, the Discharger shall increase the BOD_5 sampling frequency to daily until it demonstreates that the BOD_5 concentration is below 30 mg/L.

[3] Each oil and grease sampling and analysis event shall be conducted in accordance with U.S. EPA Method 1664.

[4] If pH is monitored continuously, the minimum and maximum pH values for each day shall be reported in self-monitoring reports.

[5] Effluent residual chlorine concentrations shall be monitored continuously or, at a minimum, every hour. The Discharger shall report for each day the maximum residual chlorine concentration observed following dechlorination. However, if monitoring continuously, the Discharger shall report for each day the maximum residual chlorine concentration based only on discrete readings from the continuous monitoring taken every hour on the hour. The Discharger shall retain continuous monitoring readings for at least three years. The Regional Water Board reserves the right to use all other continuous monitoring data for discretionary enforcement.

[6] Acute bioassay tests shall be performed in accordance with MRP section V.A.

[7] Critical life stage toxicity tests shall be performed in accordance with MRP section V.B.

[8] The four samples shall be collected in different calendar months during the higher recreational water contact season (June through October). If the enterococcus effluent limitation is exceeded, the Discharger shall conduct 5/Month accelerated sampling for at least three consecutive months. If full compliance is demonstrated after the three months, the Discharger may return to the 4/Year sampling.

[9] Results may be reported as Colony Forming Units/100 milliliters (CFU/100 mL) if the laboratory method used provides results in CFU/100 mL.

B. Wet Weather

1. **Southeast Plant and North Point Facility Outfalls.** During wet weather, when wet weather facilities are operating, the Discharger shall monitor Southeast Plant effluent at Monitoring Locations EFF-001B and EFF-002, and North Point Facility effluent at Monitoring Location EFF-003, as follows:

Table E-4. Effluent Monitoring — Wet Weather

Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow [1]	MGD	Continuous	Continuous/D
TSS	mg/L	C-X	1/Month
COD	mg/L	C-X	1/Month
Oil and Grease	mg/L	Grab	1/Month
pH	standard units	Continuous or Grab	Continuous or 1/Month
Enterococcus [5]	MPN/100 mL [2]	Grab	1/Day [4]
Fecal Coliform	MPN/100 mL [2]	Grab	1/Day [4]
Total Residual Chlorine	mg/L	Continuous or Grab	Continuous/H or 1/Hour
Acute Toxicity [3]	% Survival	Grab	1/Month
Copper, Total Recoverable	µg/L	C-X	1/Month
Cyanide, Total	µg/L	C-X	1/Month
Ammonia, Total	mg/L as N	Grab	1/Month

Unit Abbreviations:

MGD = million gallons per day
mg/L = milligrams per liter
mg/L as N = milligrams per liter as nitrogen
µg/L = micrograms per liter
MPN/100 mL = most probable number per 100 milliliters

Sample Type:

Continuous = measured continuously
C-X = composite sample comprised of individual grab samples collected at equal intervals of no more than one hour for the duration of the discharge event but not exceeding 24 hours. If an event does not last at least 24-hours, the Discharger shall sample for as long as possible and note the duration in its self-monitoring report.
Grab = grab sample

Sampling Frequency:

Continuous/H = measured continuously, and recorded and reported hourly
Continuous/D = measured continuously, and recorded and reported daily
1/Hour = once per hour
1/Month = once per month
1/Day = once per wet weather day

Footnotes:

[1] Flow shall be monitored continuously and the following information shall be reported in monthly self-monitoring reports:
- Daily average flow (MGD)
- Monthly average flow (MGD)
- Total monthly flow volume (MG)
- Maximum and minimum daily average flow rates (MGD)

[2] Results may be reported as colony forming units (CFU)/100 mL if the laboratory method used provides results in CFU/100 mL.

[3] Acute bioassay tests shall be performed only at Monitoring Location EFF-001B and EFF-003 in accordance with MRP section V.A.

[4] Wet weather effluent samples shall be collected within 4 hours after discharges start (when discharges start between 4:00 a.m. and 2:00 p.m.). If the wet weather facility begins operation after 2:00 p.m., samples shall be collected first thing the next morning during business hours (by 9:00 a.m.), provided that the discharge is still occurring.

[5] Data from both wet and dry weather shall be included when calculating the geometric mean for compliance with this monthly wet weather limitation. For days with discharge but no sampling, the enterococcus densities shall be assumed to be the same as the densities of the most recent discharge samples. For days with no discharge, enterococcus densities shall be assumed to be 1 MPN/100 mL for calculational purposes.

2. **Combined Sewer Discharge Outfalls.** During wet weather, when combined sewer discharges are occurring, the Discharger shall monitor combined sewer discharges at Monitoring Locations CSD-010 through CSD-043 as follows:

Table E-5. Combined Sewer Discharge Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency
Event Duration	minutes	---	1/Event
Flow Volume [1]	MG	Continuous	1/Event

Unit Abbreviations:

MG = million gallons

Sample Type:

Continuous = measured continuously

Sampling Frequency:

1/Event = once per combined sewer discharge event

Footnote:

[1] Flow volume may be estimated using models.

The Discharger shall also record and report in its self-monitoring reports the following information for each combined sewer discharge event at Monitoring Locations CSD-010 through CSD-043:

a. Date and time that combined sewer discharge started;

b. Rainfall intensity and amount (aggregated hourly data); and

c. Information supporting discharge volume estimate (if estimated).

V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

The Discharger shall monitor whole effluent acute and chronic toxicity as follows.

A. Whole Effluent Acute Toxicity

1. During dry weather, acute toxicity at Discharge Point No. 001 (Monitoring Location EFF-001A) shall be evaluated by measuring survival of test organisms exposed to 96-hour continuous flow-through bioassays. The Discharger may stop a bioassay if wet weather occurs during a 96-hour test. If so, the Discharger shall initiate another test as soon as possible (i.e., as soon as approximately 96 hours of dry weather is forecasted). The Discharger may choose to continue a test during wet weather unless the instantaneous influent flow to the Southeast Plant (at Monitoring Location INF-001 as defined in the MRP) exceeds 110 MGD and discharge occurs at Discharge Point No. 002.

During wet weather, acute toxicity at Discharge Point Nos. 001 and 003 through 006 (Monitoring Locations EFF-001B and EFF-003) shall be evaluated by measuring survival of test organisms exposed to 96-hour static bioassays.

2. Test organisms shall be rainbow trout (*Oncorhynchus mykiss*) or fathead minnow (*Pimphales promelas*). The Executive Officer may specify a more sensitive organism or, if testing a particular organism proves unworkable, the most sensitive organism available.

3. All bioassays shall be performed according to the most up-to-date protocols in 40 C.F.R. part 136, currently *Methods for Measuring the Acute Toxicity of Effluents and Receiving Water to Freshwater and Marine Organisms,* 5th Edition (EPA-821-R-02-012).

4. If the Discharger demonstrates that specific identifiable substances in the discharge are rapidly rendered harmless upon discharge to the receiving water, compliance with the acute toxicity limit may be determined after test samples are adjusted to remove the influence of those substances. Written acknowledgement that the Executive Officer concurs with the Discharger's demonstration and that the adjustment will not remove the influence of other substances must be obtained prior to any such adjustment. The Discharger may manually adjust the pH of whole effluent acute toxicity samples prior to performing bioassays to minimize ammonia toxicity interference.

5. Bioassay water monitoring shall include, on a daily basis, pH, dissolved oxygen, ammonia (if toxicity is observed), temperature, hardness, and alkalinity. These results shall be reported. If a violation of an acute toxicity limit occurs, the bioassay test shall be repeated with new fish as soon as practical and shall be repeated until a test fish survival rate of 90 percent or greater is observed. If the control fish survival rate is less than 90 percent, the bioassay test shall be restarted with new fish and shall continue as soon as practical until an acceptable test is completed (i.e., control fish survival rate is 90 percent or greater).

B. Whole Effluent Chronic Toxicity

1. Monitoring Requirements

a. Sampling. During dry weather, the Discharger shall collect 24-hour composite effluent samples at Monitoring Location EFF-001A for critical life stage toxicity testing as indicated below. For toxicity tests requiring renewals, the Discharger shall collect 24-hour composite samples on consecutive days.

b. Test Species. The test species shall be purple sea urchin (*Strongylocentroltus purpuratus*) or, if gravid purple sea urchin are unavailable, sand dollar (*Dendraster excentricus*), unless a more sensitive species is identified.

The Discharger shall conduct a screening chronic toxicity test as described in Appendix E-1 following any significant change in the nature of the effluent. If there is no significant change in the nature of the effluent, the Discharger shall conduct a screening test and submit the results with its application for permit reissuance.

c. Frequency. Chronic toxicity monitoring shall be as specified below:

i. The Discharger shall monitor routinely twice per year.

ii. The Discharger shall accelerate monitoring to monthly after either exceeding a three-sample median of 10 TUC or a single-sample maximum of 20 TU_c. Based on the TUc results, the Executive Officer may specify a different frequency for accelerated monitoring to ensure that accelerated monitoring provides useful information.

iii. The Discharger shall return to routine monitoring if accelerated monitoring does not exceed either trigger in ii, above.

iv. If accelerated monitoring confirms consistent toxicity in excess of either trigger in ii, above, the Discharger shall continue accelerated monitoring and initiate toxicity reduction evaluation (TRE) procedures in accordance with section V.B.3, below.

v. The Discharger shall return to routine monitoring after implementing appropriate elements of the TRE, and either the toxicity drops below both triggers in ii, above, or, based on the TRE results, the Executive Officer determines that accelerated monitoring would no longer provide useful information.

Monitoring conducted pursuant to a TRE shall satisfy the requirements for routine and accelerated monitoring while the TRE is underway.

d. Methodology. Sample collection, handling, and preservation shall be in accordance with U.S. EPA protocols. In addition, bioassays shall be conducted in compliance with the most recently promulgated test methods, as shown in Appendix E-1. These are *Short-Term Methods for Estimating the Chronic Toxcicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms*, currently first edition (EPA/600/R-95-136). If these protocols prove unworkable, the Executive Officer and the Environmental Laboratory Accreditation Program may grant exceptions in writing upon the Discharger's request with justification. If the Discharger demonstrates that specific identifiable substances in the discharge are rapidly rendered harmless upon discharge to the receiving water, compliance with the chronic toxicity limit may be determined after test samples are adjusted to remove the influence of those substances. Written acknowledgement that the Executive Officer concurs with the Discharger's demonstration and that the adjustment will not remove the influence of other substances must be obtained prior to any such adjustment.

e. Dilution Series. The Discharger shall conduct tests at 20%, 15%, 10%, 5%, and 2.5%. The "%" represents percent effluent as discharged. Test sample pH may be controlled to the level of the effluent sample as received prior to being salted up.

2. Reporting Requirements

a. The Discharger shall provide toxicity test results for the current reporting period in the self-monitoring report and shall include the following, at a minimum, for each test.

i. Sample date

ii. Test initiation date

iii. Test species

iv. End point values for each dilution (e.g., number of young, growth rate, percent survival)

v. No Observable Effect Level (NOEL) values in percent effluent. The NOEL shall equal the IC_{25} or EC_{25} (see MRP Appendix E-1). If the IC_{25} or EC_{25} cannot be statistically determined, the NOEL shall equal to the No Observable Effect Concentration (NOEC) derived using hypothesis testing. The NOEC is the maximum percent effluent concentration that causes no observable effect on test organisms based on a critical life stage toxicity test.

vi. IC_{15}, IC_{25}, IC_{40}, and IC_{50} values (or EC_{15}, EC_{25}, EC_{40}, and EC_{50}) as percent effluent

vii. TUc values (100/NOEL, where NOEL = IC_{25}, EC_{25}, or NOEC

viii. Mean percent mortality (±s.d.) after 96 hours in 100% effluent (if applicable)

ix. IC_{50} or EC_{50} values for reference toxicant tests

x. Available water quality measurements for each test (e.g., pH, dissolved oxygen, temperature, conductivity, hardness, salinity, and ammonia)

b. The Discharger shall provide the results of the most recent three chronic toxicity tests and the 3-sample median in the self-monitoring report as TUc's.

3. Toxicity Reduction Evaluation (TRE)

a. The Discharger shall prepare a generic TRE work plan within 90 days of the effective date of this Order to be ready to respond to toxicity events. The Discharger shall review and update the work plan as necessary so that it remains current and applicable to the discharge and discharge facilities.

b. Within 30 days of exceeding either chronic toxicity trigger in section V.B.1.c.ii, above, the Discharger shall submit a TRE work plan, which shall be the generic work plan revised as appropriate for this toxicity event after consideration of available discharge data.

c. Within 30 days of completing an accelerated monitoring test observed to exceed either trigger in section V.B.1.c.ii, above, the Discharger shall initiate a TRE in accordance with a TRE work plan that incorporates any and all comments from the Executive Officer.

d. The TRE shall be specific to the discharge and be in accordance with current technical guidance and reference materials, including U.S. EPA guidance materials. The Discharger shall conduct the TRE as a tiered evaluation as summarized below.

i. Tier 1 shall consist of basic data collection (routine and accelerated monitoring).

ii. Tier 2 shall consist of evaluation of treatment process optimization, including operational practices and in-plant process chemicals.

iii. Tier 3 shall consist of a toxicity identification evaluation (TIE).

iv. Tier 4 shall consist of evaluation of options for additional effluent treatment processes.

v. Tier 5 shall consist of evaluation of options for modifications of in-plant treatment processes.

vi. Tier 6 shall consist of implementation of selected toxicity control measures, and followup monitoring and confirmation of implementation success.

e. The Discharger may end the TRE at any stage if monitoring finds there is no longer consistent toxicity (i.e., compliance with Provision IV.A.5 of the Order).

f. The objective of the TIE shall be to identify the substance or combination of substances causing the observed toxicity. The Discharger shall employ all reasonable efforts using currently available TIE methodologies.

g. As toxic substances are identified or characterized, the Discharger shall continue the TRE by determining the sources and evaluating alternative strategies for reducing or eliminating the toxic substances from the discharge. The Discharger shall take all reasonable steps to reduce toxicity to levels below the chronic toxicity limit.

h. Many recommended TRE elements parallel required or recommended efforts related to source control, pollution prevention, and stormwater control programs. TRE efforts should be coordinated with such efforts. To prevent duplication of efforts, evidence of complying with requirements or recommended efforts of such programs may be acceptable to demonstrate compliance with TRE requirements.

i. Chronic toxicity may be episodic and identification of causes of and reduction of sources of chronic toxicity may not be successful. Regional Water Board enforcement considerations will be based in part on the Discharger's actions and efforts to identify and control or reduce sources of consistent toxicity.

VI. RECEIVING WATER MONITORING REQUIREMENTS

A. Regional Monitoring. The Discharger shall continue to participate in the Regional Monitoring Program, which collects data on pollutants and toxicity in San Francisco Bay water, sediment, and biota.

B. Shoreline Monitoring. Following any combined sewer discharge event at Discharge Point Nos. 009, 010, 011, 013, or 015, the Discharger shall monitor shoreline receiving waters at Monitoring Locations S-202.4, S-202.5, S-210, and S-211. Following any combined sewer discharge event at Discharge Point Nos. 040, 041, or 042, the Discharger shall monitor at Monitoring Location S-301.2. Following any combined sewer discharge event at Discharge Point No. 043, the Discharger shall monitor at Monitoring Locations S-300.1 and S-301.1. Monitoring shall be conducted at each location as follows for up to seven days or until the single-sample bacteriological standards of Cal. Code of Regs. tit. 17, section 7958(a)(1), are met at that location (i.e., the enterococcus density is less than 104 most probable number (MPN)/100 mL and the fecal coliform density is less than 400 MPN/100 mL). Samples shall be collected between 8:00 a.m. and 4:00 p.m.

Table E-6. Shoreline Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency
Enterococcus [1]	MPN/100 mL [3]	Grab	1/Day
Fecal Coliform [2]	MPN/100 mL [3]	Grab	1/Day

Unit Abbreviations:

MPN/100 mL = most probable number per 100 milliliters

Sample Type:

Grab = Grab sample

Sampling Frequency:

1/Day = once per day

Footnotes:

[1] The Discharger shall monitor for enterococcus using U.S. EPA-approved methods, such as the IDEXX Enterolert method. When replicate analyses are made, the reported result shall be the geometric mean of the replicate results.

[2] Alternatively, the Discharger may measure *E. coli* as recommended for the U.S. EPA Beach Monitoring Program. *E. coli* may be measured using the IDEXX Colilert method.

[3] Results may be reported as CFU/100 mL if the test method used provides results in CFU/100 mL.

VII. PRETREATMENT AND BIOSOLIDS MONITORING REQUIREMENTS

The Discharger shall comply with the following pretreatment monitoring requirements for influent (at Monitoring Location INF-001), effluent (at Monitoring Location EFF-001A), and biosolids (at Monitoring Location BIO-001). The Discharger shall report summaries of analytical results in annual and semi-annual pretreatment reports in accordance with Attachment H. At its option, the Discharger may also report biosolids analytical results in its electronic self-monitoring reports by manual entry, by EDF/CDF, or as an attached file.

Table E-7. Pretreatment and Biosolids Monitoring

Constituents	Sampling Frequency			Sample Type	
	Influent INF-001 [1]	Effluent EFF-001A [1]	Biosolids BIO-001	Influent and Effluent	Biosolids
VOC [2]	2/Year	2/Year	2/Year	Grab	Grabs [6c]
BNA [3]	2/Year	2/Year	2/Year	Grab	Grabs [6c]
Metals [4]	1/Month	1/Month	2/Year	C-24 [6a]	Grabs [6c]
Hexavalent Chromium [5]	1/Month	1/Month	2/Year	Grab	Grabs [6c]
Mercury	1/Month	1/Month	2/Year	Grab or C-24 [6a][6b]	Grabs [6c]
Cyanide, Total	1/Month	1/Month	---	Grab	Grabs [6c]

Sample Type:

C-24 = 24-hour composite sample
Grab = Grab sample

Sampling Frequency:

1/Month = once per month
2/Year = twice per year

Footnotes:

[1] Influent and effluent monitoring conducted in accordance with Tables E-2 and E-3 may be used to satisfy these pretreatment monitoring requirements.

[2] VOC: volatile organic compounds

[3] BNA: base/neutrals and acids extractable organic compounds

[4] The metals are arsenic, cadmium, copper, lead, nickel, silver, zinc, and selenium.

[5] The Discharger may elect to report total chromium instead of hexavalent chromium. Samples collected for total chromium measurements shall be 24-hour composites.

[6] Sample types:

a. If an automatic compositor is used, the Discharger shall obtain 24-hour composite samples through flow-proportioned composite sampling. Alternatively, 24-hour composite samples may consist of discrete grab samples combined (volumetrically flow-weighted) prior to analysis or mathematically flow-weighted.

b. The Discharger may use automatic compositors for mercury if either (1) the compositing equipment (hoses and containers) complies with ultra-clean specifications, or (2) equipment blank samples demonstrate that the compositing equipment has not contaminated the sample.

c. The biosolids sample shall be a composite of the biosolids to be disposed. Biosolids collection and monitoring shall comply with the requirements specified in Attachment H, Appendix H-4. The Discharger shall also comply with the biosolids monitoring requirements of 40 C.F.R. part 503.

VIII. REPORTING REQUIREMENTS

A. General Monitoring and Reporting Requirements

The Discharger shall comply with all Standard Provisions (Attachments D and G) related to monitoring, reporting, and recordkeeping, with modifications shown in section IX, below.

B. Self-Monitoring Reports (SMRs)

1. **SMR Format.** The Discharger shall electronically submit SMRs using the State Water Board's California Integrated Water Quality System (CIWQS) Web site (http://www.waterboards.ca.gov/ciwqs/index.html). The CIWQS website will provide additional information for SMR submittal in the event of a planned service interruption for electronic submittal.

2. **SMR Due Dates and Contents.** The Discharger shall submit SMRs by the due dates, and with the contents, specified below:

   a. **Monthly SMRs —** Monthly SMRs shall be due 30 days after the end of each calendar month, covering that calendar month. The monthly SMR shall contain the applicable items described in sections V.B and V.C of both Attachments D and G of this Order. See Provision VI.C.2 (Effluent Characterization Study and Report) of this Order for information that must also be reported with monthly SMRs.

   Monthly SMRs shall include all new monitoring results obtained since the last SMR was submitted. If the Discharger monitors any pollutant more frequently than required by this Order, the Discharger shall include the results of such monitoring in the calculations and reporting for the SMR.

   b. **Annual SMR —** Annual SMRs shall be due February 1 each year, covering the previous calendar year. The annual SMR shall contain the items described in sections V.C.1.f of Attachment G. See also Provisions VI.C.2 (Effluent Characterization Study and Report) and VI.C.5.b.ix (Monitor to Characterize Wet Weather Discharge Impacts and Efficacy of Controls) of the Order for requirements to submit reports with the annual SMR.

   c. **Specifications for Submitting SMRs to CIWQS —** The Discharger shall submit analytical results and other information using one of the following methods.

Table E-8. CIWQS Reporting

Parameter	Method of Reporting	
	EDF/CDF data upload or manual entry	**Attached File**
All parameters identified in influent, effluent, and receiving water monitoring tables (except Dissolved Oxygen and Temperature)	Required for all results	
Dissolved Oxygen Temperature	Required for monthly maximum and minimum results only [1]	Discharger may use this method for all results or keep records
Cyanide Arsenic Cadmium Chromium Copper Lead Mercury Nickel Selenium Silver Zinc Dioxins and Furans (by U.S. EPA Method 1613)	Required for all results [2]	
Antimony Beryllium Thallium Other Pollutants (by U.S. EPA Methods 601, 602, 608, 610, 614, 624, and 625)	Not required (unless identified in influent, effluent, or receiving water monitoring tables), but encouraged [1]	Discharger may use this method and submit results with application for permit reissuance, unless data are submitted by CDF/EDF upload
Volume and Duration of Blended Discharge [3]	Required for all blended effluent discharges	

Parameter	Method of Reporting	
	EDF/CDF data upload or manual entry	Attached File
Analytical Method	Not required (Discharger may select "data unavailable") [1]	
Collection Time Analysis Time	Not required (Discharger may select "0:00") [1]	

Footnotes:

[1] The Discharger shall continue to monitor at the minimum frequency specified in this MRP, keep records of the measurements, and make the records available upon request.

[2] These parameters require EDF/CDF data upload or manual entry regardless of whether monitoring is required by this MRP or other provisions of this Order (except for biosolids, sludge, or ash provisions).

[3] The requirement for volume and duration of blended discharge applies only if this Order authorizes the Discharger to discharge blended effluent.

The Discharger shall arrange all reported data in a tabular format and summarize data to clearly illustrate whether the Facility is operating in compliance with effluent limitations. The Discharger is not required to duplicate the submittal of data entered in a tabular format within CIWQS. When electronic submittal of data is required and CIWQS does not provide for entry into a tabular format, the Discharger shall electronically submit the data in a tabular format as an attachment.

3. **Monitoring Periods.** Monitoring periods for all required monitoring shall be as set forth below unless otherwise specified:

Table E-9. Monitoring Periods

Sampling Frequency	Monitoring Period Begins On…	Monitoring Period
Continuous	Permit effective date	All
1/Hour	Permit effective date	Hourly
1/Day	Permit effective date	Midnight through 11:59 p.m. or any 24-hour period that reasonably represents a calendar day for purposes of sampling.
1/Week or 2/Week or 5/Week	Sunday following permit effective date or on permit effective date if on Sunday	Sunday through Saturday
1/Month	First day of calendar month following permit effective date or on permit effective date if on first day of month	First day of calendar month through last day of calendar month
1/2 Months	First day of calendar month following permit effective date or on permit effective date if that date is first day of month	First day of calendar month through last day of next calendar month
1/Year	January 1	January 1 through December 31
2/Year	Closest January 1 or July 1 following (or on) permit effective date	November 1 through April 30 May 1 through October 31
4/Year	Closest January 1, April 1, July 1, or October 1 following (or on) permit effective date	January 1 through March 31 April 1 through June 30 July 1 through September 30 October 1 through December 31

Sampling Frequency	Monitoring Period Begins On…	Monitoring Period
1/5 Years	Permit effective date	Once during the Order term no more than 12 months prior to applying for permit reissuance.

4. **RL and MDL Reporting.** The Discharger shall report with each sample result the Reporting Level (RL) and Method Detection Limit (MDL) as determined by the procedure in 40 C.F.R. part 136. The Discharger shall report the results of analytical determinations for the presence of chemical constituents in a sample using the following reporting protocols:

   a. Sample results greater than or equal to the RL shall be reported as measured by the laboratory (i.e., the measured chemical concentration in the sample).

   b. Sample results less than the RL, but greater than or equal to the laboratory's MDL, shall be reported as "Detected, but Not Quantified," or DNQ. The estimated chemical concentration of the sample shall also be reported. The laboratory may, if such information is available, include numerical estimates of the data quality for the reported result. Numerical estimates of data quality may be percent accuracy (+/- a percentage of the reported value), numerical ranges (low to high), or any other means the laboratory considers appropriate.

   c. Sample results less than the laboratory's MDL shall be reported as "Not Detected" or ND.

   d. The Discharger shall instruct laboratories to establish calibration standards so that the minimum level (ML) value (or its equivalent if there is differential treatment of samples relative to calibration standards) is the lowest calibration standard. At no time is the Discharger to use analytical data derived from extrapolation beyond the lowest point of the calibration curve.

5. **Compliance Determination.** Compliance with effluent limitations for priority pollutants shall be determined using sample reporting protocols defined above and in the Fact Sheet and Attachments A, D, and G. For purposes of reporting and administrative enforcement by the Regional Water Board and State Water Board, the Discharger shall be deemed out of compliance with effluent limitations if the concentration of the priority pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the reporting level (RL).

C. Discharge Monitoring Reports (DMRs)

1. At any time during the term of this Order, the State Water Board or Regional Water Board may notify the Discharger to electronically submit DMRs. Until such notification is given, the Discharger shall submit DMRs in accordance with the requirements described below.

2. Once notified by the State Water Board or Regional Water Board, the Discharger shall submit hard copy DMRs. The Discharger shall sign and certify DMRs as Attachment D requires. The Discharger shall submit original DMRs to one of the addresses listed below:

Standard Mail	FedEx/UPS/Other Private Carriers
State Water Resources Control Board Division of Water Quality c/o DMR Processing Center PO Box 100 Sacramento, CA 95812-1000	State Water Resources Control Board Division of Water Quality c/o DMR Processing Center 1001 I Street, 15th Floor Sacramento, CA 95814

3. All discharge monitoring results shall be reported on official U.S. EPA pre-printed DMR forms (EPA Form 3320-1) or self-generated forms that follow the exact same format as EPA Form 3320-1.

IX. MODIFICATIONS TO ATTACHMENT G

This MRP modifies Attachment G as indicated below:

A. Attachment G sections V.C.1.f and V.C.1.g are revised as follows, and section V.C.1.h (Reporting data in electronic format) is deleted.

f. Annual self-monitoring report requirements

By the date specified in the MRP, the Discharger shall submit an annual report to the Regional Water Board covering the previous calendar year. The report shall contain the following:

1) Annual compliance summary table of treatment plant performance (this summary table is not required if the Discharger has submitted the year's monitoring results to CIWQS in electronic reporting format by EDF/CDF upload or manual entry);

2) Comprehensive discussion of treatment plant performance and compliance with the permit (this discussion shall include any corrective actions taken or planned, such as changes to facility equipment or operation practices that may be needed to achieve compliance, and any other actions taken or planned that are intended to improve performance and reliability of the Discharger's wastewater collection, treatment, or disposal practices);

3) Both tabular and graphical summaries of the monitoring data for the previous year if parameters are monitored at a frequency of monthly or greater (this item is not required if the Discharger has submitted the year's monitoring results to CIWQS in electronic reporting format by EDF/CDF upload or manual entry);

4) List of approved analyses, including the following:

(i) List of analyses for which the Discharger is certified;

(ii) List of analyses performed for the Discharger by a separate certified laboratory (copies of reports signed by the laboratory director of that laboratory shall not be submitted but be retained onsite); and

(iii) List of "waived" analyses, as approved;

5) Plan view drawing or map showing the Discharger's facility, flow routing, and sampling and observation station locations;

6) Results of annual facility inspection to verify that all elements of the SWPP Plan are accurate and up to date (only required if the Discharger does not route all stormwater to the headworks of its wastewater treatment plant); and

7) Results of facility report reviews (The Discharger shall regularly review, revise, and update, as necessary, the O&M Manual, the Contingency Plan, the Spill Prevention Plan, and Wastewater Facilities Status Report so that these documents remain useful and relevant to current practices. At a minimum, reviews shall be conducted annually. The Discharger shall include, in each Annual Report, a description or summary of review and evaluation procedures, recommended or planned actions, and an estimated time schedule for implementing these actions. The Discharger shall complete changes to these documents to ensure they are up-to-date.).

g. Report submittal

The Discharger shall submit SMRs addressed as follows, unless the Discharger submits SMRs electronically to CIWQS:

California Regional Water Quality Control Board
San Francisco Bay Region
1515 Clay Street, Suite 1400
Oakland, CA 94612
Attn: NPDES Wastewater Division

h. Reporting data in electronic format – *Deleted*

B. Attachment G sections V.E.2, V.E.2.a, and V.E.2.c are revised as follows, and sections V.E.2.b (24-hour Certification) and V.E.2.d (Communication Protocol) are deleted.

2. Unauthorized Discharges from Municipal Wastewater Treatment Plants[1]

The following requirements apply to municipal wastewater treatment plants that experience an unauthorized discharge at their treatment facilities and

[1] California Code of Regulations, Title 23, Section 2250(b), defines an unauthorized discharge to be a discharge, not regulated by waste discharge requirements, of treated, partially treated, or untreated wastewater resulting from the intentional or unintentional diversion of wastewater from a collection, treatment or disposal system.

supersede requirements imposed on the Discharger by the Executive Officer by letter of May 1, 2008.

a. Two (2)-Hour Notification

For any unauthorized discharges that enter a drainage channel or a surface water, the Discharger shall, as soon as possible, but not later than two (2) hours after becoming aware of the discharge, notify the California Emergency Management Agency (CalEMA, currently 800-852-7550), the local health officers or directors of environmental health with jurisdiction over the affected water bodies, and the Regional Water Board. Timely notification by the Discharger to CalEMA also satisfies notification to the Regional Water Board. Notification shall include the following:

1) Incident description and cause;

2) Location of threatened or involved waterway(s) or storm drains;

3) Date and time the unauthorized discharge started;

4) Estimated quantity and duration of the unauthorized discharge (to the extent known), and the estimated amount recovered;

5) Level of treatment prior to discharge (e.g., raw wastewater, primary treated, undisinfected secondary treated, and so on); and

6) Identity of the person reporting the unauthorized discharge.

b. 24-hour Certification – *Deleted*

c. 5-day Written Report

Within five business days, the Discharger shall submit a written report that includes, in addition to the information required above, the following:

1) Methods used to delineate the geographical extent of the unauthorized discharge within receiving waters;

2) Efforts implemented to minimize public exposure to the unauthorized discharge;

3) Visual observations of the impacts (if any) noted in the receiving waters (e.g., fish kill, discoloration of water) and the extent of sampling if conducted;

4) Corrective measures taken to minimize the impact of the unauthorized discharge;

5) Measures to be taken to minimize the chances of a similar unauthorized discharge occurring in the future;

6) Summary of Spill Prevention Plan or O&M Manual modifications to be made, if necessary, to minimize the chances of future unauthorized discharges; and

7) Quantity and duration of the unauthorized discharge, and the amount recovered.

d. Communication Protocol – *Deleted*

X. MODIFICATIONS TO ATTACHMENT H

This MRP modifies Attachment H as indicated below.

A. Attachment H, Appendix H-3, Signature Requirements for Pretreatment Annual and Semiannual Reports, is revised as follows.

The pretreatment annual and semiannual reports shall be signed by a principal executive officer, ranking elected official, or other duly authorized employee who is responsible for the overall operation of the Discharger (POTW - 40 C.F.R. section 403.12[m]). Signed copies of the reports shall be submitted to the State Water Board and the Regional Water Board through the electronic self-monitoring report (eSMR) module of the California Integrated Water Quality System (CIWQS).

APPENDIX E-1
CHRONIC TOXICITY
DEFINITION OF TERMS AND SCREENING PHASE REQUIREMENTS

I. Definition of Terms

A. No observed effect level (NOEL) for compliance determination is equal to IC_{25} or EC_{25}. If the IC_{25} or EC_{25} cannot be statistically determined, the NOEL shall be equal to the NOEC derived using hypothesis testing.

B. Effective concentration (EC) is a point estimate of the toxicant concentration that would cause an adverse effect on a quantal, "all or nothing," response (such as death, immobilization, or serious incapacitation) in a given percent of the test organisms. If the effect is death or immobility, the term lethal concentration (LC) may be used. EC values may be calculated using point estimation techniques such as probit, logit, and Spearman-Karber. EC_{25} is the concentration of toxicant (in percent effluent) that causes a response in 25 percent of the test organisms.

C. Inhibition concentration (IC) is a point estimate of the toxicant concentration that would cause a given percent reduction in a nonlethal, nonquantal biological measurement, such as growth. For example, an IC_{25} is the estimated concentration of toxicant that would cause a 25 percent reduction in average young per female or growth. IC values may be calculated using a linear interpolation method such as U.S. EPA's Bootstrap Procedure.

D. No observed effect concentration (NOEC) is the highest tested concentration of an effluent or a toxicant at which no adverse effects are observed on the aquatic test organisms at a specific time of observation. It is determined using hypothesis testing.

II. Chronic Toxicity Screening Phase Requirements

A. The Discharger shall perform screening phase monitoring:

1. Subsequent to any significant change in the nature of the effluent discharged through changes in sources or treatment, except those changes resulting from reductions in pollutant concentrations attributable to source control efforts, or

2. Prior to permit reissuance. Screening phase monitoring data shall be included in the NPDES permit application for reissuance. The information shall be as recent as possible, but may be based on screening phase monitoring conducted within 5 years before the permit expiration date.

B. Design of the screening phase shall, at a minimum, consist of the following elements:

1. Use of test species specified in Appendix E-2, attached, and use of the protocols referenced in those tables.

2. Two stages:

a. Stage 1 shall consist of a minimum of one battery of tests conducted concurrently. Selection of the type of test species and minimum number of tests shall be based on Appendix E-2 (attached).

b. Stage 2 shall consist of a minimum of two test batteries conducted at a monthly frequency using the three most sensitive species based on the Stage 1 test results.

3. Appropriate controls.

4. Concurrent reference toxicant tests.

5. Dilution series of 100%, 50%, 25%, 12.5%, 6.25%, and 0%, where "%" is percent effluent as discharged, or as otherwise approved by the Executive Officer if different dilution ratios are needed to reflect discharge conditions.

C. The Discharger shall submit a screening phase proposal. The proposal shall address each of the elements listed above. If within 30 days, the Executive Officer does not comment, the Discharger shall commence with screening phase monitoring.

APPENDIX E-2
SUMMARY OF TOXICITY TEST SPECIES REQUIREMENTS

Table AE-1. Critical Life Stage Toxicity Tests for Estuarine Waters

Species	(Scientific Name)	Effect	Test Duration	Reference
Alga	*(Skeletonema costatum)* *(Thalassiosira pseudonana)*	Growth rate	4 days	1
Red alga	*(Champia parvula)*	Number of cystocarps	7–9 days	3
Giant kelp	*(Macrocystis pyrifera)*	Percent germination; germ tube length	48 hours	2
Abalone	*(Haliotis rufescens)*	Abnormal shell development	48 hours	2
Oyster Mussel	*(Crassostrea gigas)* *(Mytilus edulis)*	Abnormal shell development; percent survival	48 hours	2
Echinoderms - Urchins Sand dollar	*(Strongylocentrotus purpuratus, S. franciscanus)* *(Dendraster excentricus)*	Percent fertilization or larval development	1 hour (fertilization) or 72 hours (development)	2
Shrimp	*(Americamysis bahia)*	Percent survival; growth	7 days	3
Shrimp	*(Holmesimysis costata)*	Percent survival; growth	7 days	2
Topsmelt	*(Atherinops affinis)*	Percent survival; growth	7 days	2
Silversides	*(Menidia beryllina)*	Larval growth rate; percent survival	7 days	3

Toxicity Test References:

1. American Society for Testing Materials (ASTM). 1990. Standard Guide for Conducting Static 96-Hour Toxicity Tests with Microalgae. Procedure E 1218-90. ASTM, Philadelphia, PA.

2. Short-term Methods for Estimating the Chronic Toxicity of Effluent and Receiving Waters to West Coast Marine and Estuarine Organisms. EPA/600/R-95/136. August 1995.

3. Short-term Methods for Estimating the Chronic Toxicity of Effluent and Receiving Waters to Marine and Estuarine Organisms. EPA/821/R-02/014. October 2002.

Table AE-2. Critical Life Stage Toxicity Tests for Fresh Waters

Species	(Scientific Name)	Effect	Test Duration	Reference
Fathead minnow	*(Pimephales promelas)*	Survival; growth rate	7 days	4
Water flea	*(Ceriodaphnia dubia)*	Survival; number of young	7 days	4
Alga	*(Selenastrum capricornutum)*	Final cell density	4 days	4

Toxicity Test Reference:

1. Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, fourth Edition Chronic manual (EPA-821-R-02-013, October 2002).

Table AE-3. Toxicity Test Requirements for Stage One Screening Phase

Requirements	Receiving Water Characteristics		
	Discharges to Coast	Discharges to San Francisco Bay [1]	
	Ocean	Marine/Estuarine	Freshwater
Taxonomic diversity	1 plant 1 invertebrate 1 fish	1 plant 1 invertebrate 1 fish	1 plant 1 invertebrate 1 fish
Number of tests of each salinity type: Freshwater [2] Marine/Estuarine	0 4	1 or 2 3 or 4	3 0
Total number of tests	4	5	3

[1] (a) Marine refers to receiving water salinities greater than 1 part per thousand (ppt) at least 95 percent of the time during a normal water year.

(b) Freshwater refers to receiving water with salinities less than 1 ppt at least 95 percent of the time during a normal water year.

(c) Estuarine refers to receiving water salinities that fall between those of marine and freshwater, as described above.

[2] The freshwater species may be substituted with marine species if:

(a) The salinity of the effluent is above 1 ppt greater than 95 percent of the time, or

(b) The ionic strength (TDS or conductivity) of the effluent at the test concentration used to determine compliance is documented to be toxic to the test species.

ATTACHMENT F - FACT SHEET

Contents

Tables

ATTACHMENT F – FACT SHEET

This Fact Sheet includes the legal requirements and technical rationale that serve as the basis for the requirements of this Order. As described in section II.B of the Order, the Regional Water Board incorporates this Fact Sheet as its findings supporting the issuance of the Order.

I. PERMIT INFORMATION

The following table summarizes administrative information related to the facility.

Table F-1. Facility Information

WDID	2 386010001
CIWQS Place ID	256499
Discharger	City and County of San Francisco
Facility Name	Southeast Water Pollution Control Plant, North Point Wet Weather Facility, Bayside Wet Weather Facilities, and Wastewater Collection System
Facility Address	San Francisco Public Utilities Commission / Wastewater Enterprise 750 Phelps Street San Francisco, CA 94124
	San Francisco County
Facility Contact, Title, Phone	Tommy Moala, Assistant General Manager, Wastewater Enterprise, (415) 554-2465
Authorized Person to Sign and Submit Reports	Same as Facility Contact
Mailing Address	San Francisco Public Utilities Commission 525 Golden Gate Ave., 13th Floor San Francisco, CA 94102
Billing Address	Same as Mailing Address
Facility Type	Publicly Owned Treatment Works
Major or Minor Facility	Major
Threat to Water Quality	1
Complexity	A
Pretreatment Program	Yes
Reclamation Requirements	Not Applicable
Mercury and PCBs Requirements	NPDES Permit No. CA0038849
Permitted Flow	85.4 million gallons per day (MGD)
Design Flow	Southeast Water Pollution Control Plant: 85.4 MGD – Average dry weather design flow capacity; 250 MGD – Wet weather design flow capacity: 150 MGD receives primary and secondary treatment, and additional 100 MGD receives only primary treatment. North Point Wet Weather Facility: 150 MGD – Wet weather design flow capacity (only primary treatment).
Watershed	San Francisco Bay
Receiving Water	San Francisco Bay
Receiving Water Type	Marine

A. The City and County of San Francisco (Discharger) is the owner and operator of the Southeast Water Pollution Control Plant (Southeast Plant), North Point Wet Weather Facility (North Point Facility), Bayside Wet Weather Facilities, and wastewater collection system (collectively Facility).

For the purposes of this Order, references to the "discharger" or "permittee" in applicable federal and State laws, regulations, plans, or policy are held to be equivalent to references to the Discharger herein.

B. The Discharger is regulated pursuant to National Pollutant Discharge Elimination System (NPDES) Permit No. CA0037664. It was previously subject to Order No. R2-2008-0007 (previous order), which was adopted on January 30, 2008, and expired on March 31, 2013. The Facility discharges wastewater to Central and Lower San Francisco Bay, waters of the United States within the San Francisco Bay watershed. Attachment B provides a map of the area around the Facility. Attachment C provides a Facility flow schematic.

The Discharger must file a petition with the State Water Resources Control Board (State Water Board), Division of Water Rights, and receive approval for any change in the point of discharge, place of use, or purpose of use of treated wastewater that decreases the flow in any portion of a watercourse. The State Water Board retains the jurisdictional authority to enforce such requirements under Water Code section 1211.

C. The Discharger filed a Report of Waste Discharge and submitted an application for reissuance of its WDRs and NPDES permit on October 2, 2012.

D. The discharge is also regulated under NPDES Permit No. CA0038849, which establishes requirements on mercury and polychlorinated biphenyls (PCBs) from wastewater discharges to San Francisco Bay. This Order does not affect the mercury and PCBs permit.

II. FACILITY DESCRIPTION

A. Wastewater and Biosolids Treatment and Controls

1. **Location and Service Area.** The Facility serves eastern San Francisco and portions of Brisbane and Daly City (served by the City of Brisbane, the Bayshore Sanitary District, and the North San Mateo County Sanitation District). The service area population is approximately 580,000.

   The Southeast Plant is located on Phelps Street at Jarrold Avenue near the Islais Creek Channel. It provides primary and secondary treatment of combined wastewater and stormwater. The North Point Facility is located on Bay Street near The Embarcadero. It provides primary treatment of combined wastewater and stormwater during wet weather. The Bayside Wet Weather Facilities are located throughout the eastern side of San Francisco, primarily near the shore. They provide equivalent-to-primary treatment during wet weather.

2. **Collection System.** The collection system is primarily a combined sewer system that conveys wastewater and stormwater to the Southeast Plant, North Point Facility, and Bayside Wet Weather Facilities. It consists of approximately 600 miles of pipe, and 7 major and 11 minor pump stations. Separate sanitary and storm drains serve isolated areas, including parts of Candlestick Point and Mission Bay. The Facility also receives wastewater from three satellite wastewater collection systems: the Bayshore Sanitary District (portions of Brisbane and Daly City), the City of Brisbane (residential sector), and the North San Mateo County Sanitation District (portions of Daly City). For the purposes of this Order, the Facility does not include the satellite collection systems.

3. **Wastewater Treatment.** The Discharger operates the Southeast Plant, North Point Facility, and Bayside Wet Weather Facilities to maximize treatment.

   a. **Southeast Plant.** During dry weather, the Southeast Plant provides secondary wastewater treatment. The treatment processes include a headworks (with coarse and fine bar screens, and grit removal), primary sedimentation tanks, pure oxygen aeration basins, secondary clarifiers, and chlorine contact basins (for chlorination using sodium hypochlorite and dechlorination using sodium bisulfite). These processes are shown in the diagram in Attachment C. The Southeast Plant has a dry weather design capacity of 85.4 MGD. From June 2010 through August 2012, its average dry weather flow was 58 MGD.

      During wet weather, the Southeast Plant processes up to 250 MGD of combined wastewater (i.e., sewage, industrial wastewater, and stormwater). Up to 150 MGD receives both primary and secondary treatment; the remaining flow (up to 100 MGD) receives only primary treatment. The entire volume is disinfected prior to discharge.

   b. **North Point Facility.** The North Point Facility discharges only during wet weather and provides primary treatment of combined wastewater. The treatment consists of bar screens, sedimentation tanks equipped with skimmers (clarification, removal of floatables), sodium hypochlorite injection, and dechlorination using sodium bisulfite addition. The North Point Facility can provide primary treatment for up to 150 MGD of combined wastewater. The entire volume of treated wastewater is disinfected and dechlorinated prior to discharge. Solids are directed to the Southeast Plant for digestion.

      The North Point Facility discharges under the following circumstances:

      - the North Shore Storage/Transport Box is at 200 inches;
      - within 60 minutes of any combined sewer discharge through Discharge Point Nos. 013 through 017; or
      - as necessary to minimize the likelihood of combined sewer discharges in the Central and Southeast Drainage Basins.

   c. **Bayside Wet Weather Facilities.** During dry weather, storage/transport structures transport wastewater to the Southeast Plant. During wet weather, these structures transfer combined wastewater to the Southeast Plant and, if necessary, the North Point Facility. They also provide storage for more than 120 million gallons of combined wastewater. In the event that the capacities of the Southeast Plant, North Point Facility, and storage/transport structures are exceeded, the combined wastewater receives the equivalent of primary treatment in the storage/transport structures and is discharged to San Francisco Bay through any one of 29 shoreline combined sewer discharge structures. The treatment in the storage/transport structures consists of settling solids with a series of baffles and weirs that also remove floatable materials prior to discharge. This process equates to the minimum treatment specified in U.S. EPA's *Combined Sewer Overflow Control Policy* (see Fact Sheet section III.C.8). After the wet weather is over, wastewater and accumulated solids remaining in the storage/transport structures are sent to the Southeast Plant for secondary treatment.

4. **Sludge and Biosolids Management.** Sludge from the primary and secondary clarification operations is processed using anaerobic digestion. The process consists of gravity belt thickeners for waste activated sludge thickening, mesophilic anaerobic digesters, and horizontal bowl centrifuges for dewatering. After digestion, the sludge is conditioned with ferric chloride and polymer, dewatered, and stored in cake hoppers for hauling. The digested and dewatered biosolids are beneficially used at a permitted landfill or land-applied at a permitted site. A portion of the biosolids is blended with green waste to create Class A compost. Class B biosolids are land-applied on farms in Solano and Sonoma counties or used at a landfill.

B. Discharge Points and Receiving Waters

1. **Dry Weather Discharges.** During dry weather, all flow receives secondary treatment and is discharged to Lower San Francisco Bay (a tidally-influenced, marine waterbody) through a deep water outfall (Discharge Point No. 001) at Pier 80, which is immediately north of the Islais Creek Channel. The outfall is approximately 810 feet east of Pier 80 at a depth of approximately 43 feet below mean lower low water. A diffuser at the outfall consists of 18 ports placed 15.9 feet apart on center along the terminal end of the outfall. The length of the diffuser is oriented approximately 90 degrees off north, perpendicular to the predominant current direction. The diffuser port openings are 8 inches in diameter, located at an elevation 42 inches above the sediment bed, and set at 0 degrees from horizontal.

   Following a September 2010 inspection that discovered that some fittings on the diffuser risers had broken off, the Discharger began replacing the discharge ports on the diffuser. The number of ports will remain the same, but the new ports will be equipped with duckbill valves to prevent rocks and debris from entering. The duckbill valves will likely increase dilution at the outfall.

2. **Wet Weather Discharges.** During wet weather, when secondary treatment capacity at the Southeast Plant has been exceeded, a portion of the primary-treated effluent bypasses aeration and secondary clarification. The bypassed primary effluent is chlorinated and dechlorinated, and then blended with disinfected secondary-treated wastewater and discharged through Discharge Point No. 001. The discharge from the Southeast Plant through Discharge Point No. 001 is maximized up to 110 MGD. Effluent flows in excess of 110 MGD are discharged via the Quint Street shallow water outfall into Islais Creek (Discharge Point No. 002). All effluent discharged through Discharge Point No. 002 receives secondary treatment, and all primary treated effluent is directed to the deep water outfall. Up to 140 MGD of secondary-treated wastewater may be discharged through Discharge Point No. 002. Under the most critical circumstances, up to 100 MGD of disinfected primary-treated effluent may be blended with 10 MGD of disinfected secondary-treated effluent and discharged through Discharge Point No. 001.

   When necessary, treated wastewater from the North Point Facility is discharged into San Francisco Bay through four deepwater outfalls, two of which discharge at the end of Pier 33 (Discharge Point Nos. 003 and 004) and two of which discharge at the end of Pier 35 (Discharge Point Nos. 005 and 006). If the capacities of the Southeast Plant, the North Point Facility, and the storage/transport structures are exceeded, wastewater in the storage/transport structures is discharged to San Francisco Bay through one or more of the 29 combined sewer discharge structures (Discharge Point Nos. 009 through 043).

C. Summary of Existing Requirements and Monitoring Data

Effluent limitations contained in the previous order and representative monitoring data from the previous order term are presented below:

Table F-2. Previous Effluent Limitations and Monitoring Data

Parameter	Units	Effluent Limitations					Monitoring Data (4/08–9/12)
		Monthly Average	Weekly Average	Daily Maximum	Instant-aneous Maximum	Instant-aneous Minimum	Highest Daily Discharge
Dry Weather (Discharge Point No. 001)							
Biochemical Oxygen Demand, 5-day @ 20°C (BOD_5)	mg/L	30	45	---	---	---	47 [6]
Total Suspended Solids (TSS)	mg/L	30	45	---	---	---	62 [6]
Oil and Grease	mg/L	10	---	20	---	---	17
pH	s.u.	---	---	---	9.0	6.0	6.1 – 7.7
Total Residual Chlorine	mg/L	---	---	---	0.0	---	0.0
Enterococcus	MPN/ 100 mL	35 [1]	---	---	---	---	16 [4]
Fecal Coliform	MPN/ 100 mL	500 [2]	---	---	---	---	270
Copper	µg/L	53 [3]	---	76 [3]	---	---	37
Lead	µg/L	36	---	89	---	---	1.6
Silver	µg/L	7	---	22	---	---	2.6
Zinc	µg/L	490	---	720	---	---	55
Cyanide	µg/L	20 [4]	---	43 [4]	---	---	9.5
Dioxin-TEQ	mg/yr	[5]					0 [5]
Tetrachloroethylene	µg/L	84	---	240	---	---	0.79
Bis (2-ethylhexyl) phthalate	µg/L	55	---	110	---	---	1.7
Ammonia	mg/L as N	190	---	290	---	---	42
Tributyltin	µg/L	0.032	---	0.065	---	---	< 0.0026
Wet Weather (Discharge Point No. 001)							
Total Residual Chlorine	mg/L	---	---	---	0.0	---	0.0
Enterococcus	MPN/ 100 mL	---	---	---	104	---	600
Fecal Coliform	MPN/ 100 mL	500 [2]	---	---	---	---	450
Wet Weather (Discharge Point No. 002)							
Total Residual Chlorine	mg/L	---	---	---	0.0	---	0.0
Enterococcus	MPN/ 100 mL	---	---	---	104	---	>24,000

Parameter	Units	Effluent Limitations					Monitoring Data (4/08–9/12)
		Monthly Average	Weekly Average	Daily Maximum	Instant-aneous Maximum	Instant-aneous Minimum	Highest Daily Discharge
Fecal Coliform	MPN/ 100 mL	500 [2]	---	---	---	---	680 [7]
Wet Weather (Discharge Point Nos. 004 through 006)							
Total Residual Chlorine	mg/L	---	---	---	0.0	---	0.0
Enterococcus	MPN/ 100 mL	---	---	---	104	---	5,800
Fecal Coliform	MPN/ 100 mL	500 [2]	---	---	---	---	>16,000 [7]

Unit Abbreviations:

mg/L = milligrams per liter
µg/L = micrograms per liter
s.u. = standard units
CFU/100 mL = colony forming units per 100 milliliters
MPN/100 mL = Most Probable Number per 100 milliliters
mg/L as N = milligrams per liter as nitrogen
mg/yr = milligrams per year

Footnotes:

[1] Monthly geometric mean.

[2] The 30-day moving median value was not to exceed 500 MPN/100 mL and no more than 10 percent of the samples in any 30-day period were to equal or exceed 1,100 MPN/100 mL.

[3] Final effluent limitations for copper became effective on the effective date of the copper site-specific objectives (January 6, 2009).

[4] Final effluent limitations for cyanide became effective on the effective date of the cyanide site specific objectives (July 22, 2008).

[5] Final effluent limitations for dioxin-TEQ became effective on June 30, 2012. The dioxin-TEQ limit was 1.6 mg/year. Compliance was to be based on the product of the average concentration in samples collected each year and the annual dry weather flow. No dioxin or furan congener was detected above the ML in Attachment G, Table A; therefore, in accordance with Attachment G section V.C.1.c.3, the 2012 dioxin-TEQ discharge was 0 mg/year.

[6] The monthly and weekly average BOD_5 and TSS concentrations at these times complied with BOD_5 and TSS effluent limitations.

[7] The 30-day median and 10th percentile fecal coliform densities at these times complied with fecal coliform effluent limitations.

Table F-3. Additional Wet Weather Monitoring Data

Parameter	Units	Discharge Point No. 001		Discharge Point No. 002		Discharge Point Nos. 003 through 006	
		Range	Median [1]	Range	Median [1]	Range	Median [1]
Chemical Oxygen Demand (COD)	mg/L	53 – 200	120	25 – 100	52	74 – 360	160
Oil and Grease	mg/L	--	--	--	--	<5 – 43	9.5
Total Residual Chlorine	mg/L	0	0	0	0	0	0
Enterococcus	MPN/ 100 mL	<10 – 600	<10	<10 – >24,000	31	<10 – 5,800	<10
Fecal Coliform	MPN/ 100 mL	<2 – 450	<10	<2 – 680	<10	<2 – >16,000	<10
Copper	µg/L	3 – 64	35	1 – 17	8	5 – 99	45
Lead	µg/L	1 – 43	12	0.1[2] – 2	1	1 – 31	13

Mercury	µg/L	<0.2 – 0.40	<0.2	<0.2	<0.2	<0.2 – 0.30[2]	<0.2
Silver	µg/L	0.04 – 2.6	0.28	0.03[2] – 0.51	0.14	0.04[2] – 0.75	0.32
Zinc	µg/L	12 – 230	100	4 – 64	32	14 – 290	130
Cyanide	µg/L	<3 – 3.3[2]	<3	<3	<3	1.9[2] – 12	<3
Ammonia	mg/L as N	3 – 29	5	7 – 41	32	2 – 14	5

Unit Abbreviations:

mg/L = milligrams per liter
µg/L = micrograms per liter
MPN/100 mL = Most Probable Number per 100 milliliters
mg/L as N = milligrams per liter as nitrogen

Footnotes:

[1] Median calculation reflects inclusion of estimated concentrations (i.e., detected but not quantified, DNQs) and nondetects (at the detection limit).

[2] Estimated concentration (i.e., detected but not quantified, DNQ)

D. Summary of Combined Sewer Discharge Events

The following tables summarize combined sewer discharge events over a 14-year period and estimated average combined sewer discharge event durations for wet season 2008-2009 through wet season 2012-2013:

Table F-4. Frequency of Combined Sewer Discharge Events

Year	Rainfall (inches)	Number of Combined Sewer Discharge Events		
		North Shore Basin [2]	Central Basin [3]	Southeast Basin [3]
1998-1999	17.0	1	13	0
1999-2000	20.9	3	12	1
2000-2001	15.8	0	8	0
2001-2002	19.3	2	9	2
2002-2003	21.1	3	14	4
2003-2004	16.9	4	8	2
2004-2005	28.2	4	15	1
2005-2006	28.9	3	16	2
2006-2007	15.1	1	5	1
2007-2008	17.4	3	7	2
2008-2009	15.6	3	4	1
2009-2010	22.4	5	11	3
2010-2011	26.3	6	21	0
2011-2012	15.9	2	8	1
14-Year Median	**18.4**	**3**	**10**	**1**
Design Criterion [1]		**4**	**10**	**1**

Footnotes:

[1] These criteria were based on 70 years of historic rainfall data and used to design the the Bayside Wet Weather Facilities. They are useful in evaluating system performance.

[2] North Shore Basin combined sewer discharges occur from Discharge Point Nos. 009 through 017.

[3] Central Basin combined sewer discharges occur from Discharge Point Nos. 018 through 035.

[4] Southeast Basin combined sewer discharges occur from Discharge Point Nos. 037 through 043.

Table F-5. Durations of Combined Sewer Discharge Events

Northshore Basin		Central Basin		Southeast Basin	
Discharge Point	Estimated Average Duration (Hours)	Discharge Point	Estimated Average Duration (Hours)	Discharge Point	Estimated Average Duration (Hours)
009	2	018	3	037	5
010	2	019	3	038	5
011	0	022	3	040	1
013	4	023	3	041	1
015	2	024	3	042	1
017	3	025	3	043	1
		026	3		
		027	3		
		028	3		
		029	2		
		030	2		
		030A	2		
		031	4		
		031A	4		
		032	4		
		033	4		
		035	4		

E. Compliance Summary

1. **Effluent Limitation Violations.** The Discharger violated its wet weather enterococcus limit ten times during the previous order term, as listed in the following table:

Table F-6. Wet Weather Enterococcus Effluent Limitation Violations

Violation Date	Monitoring Location	Unit	Effluent Limit	Reported Value
December 16, 2008	EFF-002	MPN/100mL	104	110
January 22, 2009	EFF-002	MPN/100mL	104	8,664 [1]
April 7, 2009	EFF-002	MPN/100mL	104	>24,196 [1]
January 29, 2010	EFF-002	MPN/100mL	104	11,199 [1]
December 5, 2010	EFF-001B	MPN/100mL	104	402
January 30, 2011	EFF-001B	MPN/100mL	104	598
March 19, 2011	EFF-001B	MPN/100mL	104	784 [1]
March 15, 2011	EFF-003	MPN/100mL	104	1,317 [2]
March 24, 2011	EFF-003	MPN/100mL	104	5,794 [2]
November 16, 2012	EFF-003	MPN/100mL	104	108

Footnotes:

[1] The Discharger asserts that these values may be false positives since simultaneous fecal coliform results were relatively low.

[2] These violations may be subject to minimum penalties of $3,000 each pursuant to California Water Code §13385(i).

The Discharger asserts that four reported values may be false positives due to matrix interference because, in each case, simultaneous fecal coliform results were relatively low.

However, the Discharger certified these results and, to date, has presented no corroborating information to invalidate them pursuant to MRP section XI.D.2 or Attachment G section V.C.1.a.5 of the previous order. The Discharger modified its sampling practices in early 2010 to test for interference before completing enterococcus analyses. As for the other violations, the Discharger points to the challenge of adding sufficient chlorine when operating at maximum hydraulic capacity, indicating that sudden stormwater surges make predicting the chlorine dose necessary for compliance difficult. The Discharger is considering options but has not proposed corrective actions.

The March 15 and 24, 2011, violations may be subject to minimum penalties of $3,000 each pursuant to California Water Code section 13385(i) because they are the fourth and fifth effluent limit violations within six months. Regional Water Board staff will evaluate relevant evidence and present the matter for Regional Water Board consideration as a separate action in the near future, as appropriate.

2. **Inspections.** The Facility is subject to annual compliance evaluation inspections. During the previous order term, there were five inspections, four of which focused on treatment plant operations at the Southeast Plant. The treatment plant inspections concluded with satisfactory ratings for compliance. An October 2010 inspection focused on the collection system.

   The collection system inspection addressed two main issues: (1) accumulation of grease and debris in the storage/transports; and (2) Discharger responsiveness to reports of collection system excursions onto sidewalks and streets. The Discharger responded to the inspection report by describing its routine collection system maintenance practices and programs addressing fats and grease and by pointing out that the number of apparent collection system problems reported was very high because all of its emergency hotline calls were included, whether or not they related to actual collection system problems. At the time, the Discharger was developing a new computer-based asset management system to allow it to better track and respond to calls.

   To follow up on the inspection and the Discharger's response, the Executive Officer issued an order requiring additional information pursuant to Water Code section 13267. This 13267 order required information on the extent and causes of excursions onto sidewalks and streets, and progress toward collection system improvements, asset management system development and implementation, and collection system cleaning and maintenance.

   In response, the Discharger submitted several reports, including a special study on combined sewer system excursions during the period from October 1, 2011, through September 30, 2012. Using its computer-based asset management system, it reported how many calls it received and how many of the calls related to collection system issues. Most (98 percent) of the reports related to private sewer laterals for which others were responsible. Nevertheless, the Discharger often resolved these problems on behalf of the other parties. The rest (about 70) related to the Discharger's collection system.

   The Discharger described specific maintenance activities, improvements, and repairs to its collections system; tracked the effectiveness of its fats, oil, and grease control program; and

described program improvements. Grease buildup is the main cause of the Discharger's sewer system blockages.

F. Planned Changes

The Discharger has started several infrastructure projects. In October 2012, the Discharger began the Southeast Plant Northside Facility Reliability Upgrade (Phase 2) project, which is an $11.5-million project to replace aging secondary sludge handlers and aeration-related electrical systems and to modify the secondary clarification process. The project is expected to be completed in August 2014. The Discharger began an Oxygen Generation Plant Replacement project in December 2012 and plans to complete this $12-million project in December 2013. The Discharger began dewatering facility corrosion repairs in August 2012, a $9.1-million project to address corrosion damage to concrete, the sludge piping network, and the electrical system at the sludge dewatering building. This project is expected to be completed in January 2014. The Discharger is also designing a project to begin in August 2013 to replace and relocate the sodium hypochlorite storage tanks for disinfection.

The Discharger's Sewer System Improvement Program is a three-phase, $6.9-billion effort over the next 20 years to address deficiencies, improve operational flexibility, provide seismic reliability, and ensure future compliance with anticipated environmental regulatory requirements. The program will address aging infrastructure and technologies at the treatment plants and increase the ability of the collection system to convey wastewater.

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

The requirements in this Order are based on the requirements and authorities described below:

A. Legal Authorities

This Order serves as WDRs pursuant to California Water Code article 4, chapter 4, division 7 (commencing with § 13260). This Order is also issued pursuant to Clean Water Act (CWA) section 402 and implementing regulations adopted by U.S. EPA, and Water Code chapter 5.5, division 7 (commencing with § 13370). It shall serve as an NPDES permit for point source discharges from this facility to surface waters.

B. California Environmental Quality Act

Under Water Code section 13389, this action to adopt an NPDES permit is exempt from the provisions of the California Environmental Quality Act, Public Resources Code division 13, chapter 3 (commencing with § 21100).

C. State and Federal Regulations, Policies, and Plans

1. **Water Quality Control Plan.** The Regional Water Board adopted the *Water Quality Control Plan for the San Francisco Bay Basin* (Basin Plan), which designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. Requirements in this Order implement the Basin Plan. In addition, this Order is consistent with State Water Board Resolution No. 88-63, which established State policy that all waters, with certain exceptions,

should be considered suitable or potentially suitable for municipal or domestic supply. Because of the marine influence on San Francisco Bay, total dissolved solids levels exceed 3,000 mg/L; therefore, San Francisco Bay meets an exception to State Water Board Resolution No. 88-63.

Beneficial uses for the receiving waters of each Facility discharge point are listed below:

Table F-7. Basin Plan Beneficial Uses

Discharge Points	Receiving Water	Beneficial Uses
001, 002, 019, 043	Lower San Francisco Bay	Industrial Service Supply (IND) Ocean, Commercial, and Sport Fishing (COMM) Shellfish Harvesting (SHELL) Estuarine Habitat (EST) Fish Migration (MIGR) Preservation of Rare and Endangered Species (RARE) Fish Spawning (SPWN) Wildlife Habitat (WILD) Water Contact Recreation (REC1) Non-Contact Water Recreation (REC2) Navigation (NAV)
003, 004, 005, 006, 009, 010, 011, 013, 015, 017, 018	Central San Francisco Bay	Industrial Service Supply (IND) Industrial Process Supply (PROC) Ocean, Commercial, and Sport Fishing (COMM) Shellfish Harvesting (SHELL) Estuarine Habitat (EST) Fish Migration (MIGR) Preservation of Rare and Endangered Species (RARE) Fish Spawning (SPWN) Wildlife Habitat (WILD) Water Contact Recreation (REC1) Non-Contact Water Recreation (REC2) Navigation (NAV)
022, 023, 024, 025, 026, 027, 028	Mission Creek	Ocean, Commercial, and Sport Fishing (COMM) Estuarine Habitat (EST) Wildlife Habitat (WILD) Water Contact Recreation (REC1) Non-Contact Water Recreation (REC2) Navigation (NAV)
029, 030, 030A	Central Basin	Ocean, Commercial, and Sport Fishing (COMM) Estuarine Habitat (EST) Wildlife Habitat (WILD) Water Contact Recreation (REC1) Non-Contact Water Recreation (REC2) Navigation (NAV)
031, 031A, 032, 033, 035	Islais Creek	Ocean, Commercial, and Sport Fishing (COMM) Estuarine Habitat (EST) Wildlife Habitat (WILD) Water Contact Recreation (REC1) Non-Contact Water Recreation (REC2) Navigation (NAV)

037, 038	India Basin	Ocean, Commercial, and Sport Fishing (COMM) Estuarine Habitat (EST) Wildlife Habitat (WILD) Water Contact Recreation (REC1) Non-Contact Water Recreation (REC2) Navigation (NAV)
040, 042	South Basin	Ocean, Commercial, and Sport Fishing (COMM) Estuarine Habitat (EST) Wildlife Habitat (WILD) Water Contact Recreation (REC1) Non-Contact Water Recreation (REC2) Navigation (NAV)
041	Yosemite Creek	Ocean, Commercial, and Sport Fishing (COMM) Estuarine Habitat (EST) Wildlife Habitat (WILD) Water Contact Recreation (REC1) Non-Contact Water Recreation (REC2)

2. **Sediment Quality.** The State Water Board adopted the *Water Quality Control Plan for Enclosed Bays and Estuaries – Part 1, Sediment Quality* on September 16, 2008, and it became effective on August 25, 2009. This plan supersedes other narrative sediment quality objectives, and establishes new sediment quality objectives and related implementation provisions for specifically defined sediments in most bays and estuaries. This Order implements the sediment quality objectives of this plan.

3. **National Toxics Rule (NTR) and California Toxics Rule (CTR).** U.S. EPA adopted the NTR on December 22, 1992, and amended it on May 4, 1995 and November 9, 1999. About 40 criteria in the NTR apply in California. On May 18, 2000, U.S. EPA adopted the CTR. The CTR promulgated new toxics criteria for California and incorporated the previously adopted NTR criteria that applied in the State. U.S. EPA amended the CTR on February 13, 2001. These rules contain water quality criteria for priority pollutants.

4. **State Implementation Policy.** On March 2, 2000, the State Water Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP). The SIP became effective on April 28, 2000, with respect to the priority pollutant criteria U.S. EPA promulgated for California through the NTR and the priority pollutant objectives the Regional Water Board established in the Basin Plan. The SIP became effective on May 18, 2000, with respect to the priority pollutant criteria U.S. EPA promulgated through the CTR. The State Water Board adopted amendments to the SIP on February 24, 2005, that became effective on July 13, 2005. The SIP establishes implementation provisions for priority pollutant criteria and objectives, and provisions for chronic toxicity control. Requirements of this Order implement the SIP for dry weather discharges.

5. **Antidegradation Policy.** Federal regulations at 40 C.F.R. section 131.12 requires that state water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy through State Water Board Resolution 68-16, which is deemed to incorporate the federal antidegradation policy where the federal policy applies under federal law. Resolution 68-16 requires that existing

water quality be maintained unless degradation is justified based on specific findings. The Basin Plan implements, and incorporates by reference, both the State and federal antidegradation policies. Permitted discharges must be consistent with the antidegradation provisions of 40 C.F.R. section 131.12 and State Water Board Resolution 68-16.

6. **Anti-Backsliding Requirements.** CWA sections 402(o) and 303(d)(4) and 40 C.F.R. section 122.44(l) restrict backsliding in NPDES permits. These anti-backsliding provisions require that effluent limitations in a reissued permit be as stringent as those in the previous permit, with some exceptions in which limitations may be relaxed.

7. **Endangered Species Act Requirements.** This Order does not authorize any act that results in the taking of a threatened or endangered species or any act that is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish and Game Code §§ 2050 to 2097) or the Federal Endangered Species Act (16 U.S.C.A. §§ 1531 to 1544). This Order requires compliance with effluent limits, receiving water limits, and other requirements to protect the beneficial uses of waters of the State, including protecting rare, threatened, or endangered species. The Discharger is responsible for meeting all applicable Endangered Species Act requirements.

8. **Combined Sewer Overflow Control Policy.** U.S. EPA's *Combined Sewer Overflow Control Policy* (59 Fed. Reg. 18688-18698, April 19, 1994). The policy establishes a national approach for controlling combined sewer discharges and overflows and calls for a two-phased process. During the first phase, dischargers operating combined sewer systems were required to implement the Nine Minimum Controls, which were to constitute CWA technology-based requirements as applied to combined sewer systems (best conventional pollutant control technology [BCT] and best available control technology economically achievable [BAT]). Dischargers were also required to develop Long-Term Control Plans based on their financial capabilities. During the second phase, dischargers were required to implement the Long-Term Control Plans, thus providing a basis for demonstrating or presuming attainment of water quality objectives protective of beneficial uses. This Order requires the Discharger to continue operating its combined sewer system in accordance with the Nine Minimum Controls and its Long-Term Control Plan.

D. Impaired Waters on CWA 303(d) List

In October 2011, U.S. EPA approved a revised list of impaired waters prepared pursuant to CWA section 303(d), which requires identification of specific water bodies where it is expected that water quality standards will not be met after implementation of technology-based effluent limitations on point sources. Where it has not done so already, the Regional Water Board plans to adopt Total Maximum Daily Loads (TMDLs) for pollutants on the 303(d) list. TMDLs establish wasteload allocations for point sources and load allocations for non-point sources, and are established to achieve the water quality standards for the impaired waters.

Central and Lower San Francisco Bay are listed as impaired waters. The pollutants impairing Central San Francisco Bay are chlordane, DDT, dieldrin, dioxins and furans, exotic species, mercury, dioxin-like PCBs and PCBs, selenium, and trash. The pollutants impairing Lower San Francisco Bay are chlordane, DDT, dieldrin, exotic species, dioxins and furans, mercury, trash, and dioxin-like PCBs and PCBs. On February 12, 2008, U.S. EPA approved a TMDL for

mercury in San Francisco Bay. On March 29, 2010, U.S. EPA approved a TMDL for PCBs in San Francisco Bay. The TMDLs for mercury and PCBs are incorporated into the Basin Plan and apply to this discharge; however, mercury and PCBs discharges are not covered by this Order. Instead, they are regulated under NPDES Permit No. CA0038849.

IV. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

The CWA requires point source dischargers to control the amount of conventional, non-conventional, and toxic pollutants discharged into waters of the United States. The control of pollutants discharged is established through effluent limitations and other requirements in NPDES permits. There are two principal bases for effluent limitations: 40 C.F.R. section 122.44(a) requires that permits include applicable technology-based limitations and standards; and 40 C.F.R. section 122.44(d) requires that permits include water quality-based effluent limitations to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of receiving waters.

A. Discharge Prohibitions

1. Prohibitions in this Order

a. Discharge Prohibition III.A (No discharge other than as described in this Order): This prohibition is based on 40 C.F.R. section 122.21(a) and Water Code section 13260, which require filing an application and Report of Waste Discharge before a discharge can occur. Discharges not described in the application and Report of Waste Discharge, and subsequently in this Order, are prohibited.

b. Discharge Prohibition III.B (Minimum initial dilution of 231:1): This Order is based on a modeled dilution ratio of 231:1 for the calculation of one or more effluent limitations reflecting available information regarding the dilution achieved at Discharge Point No. 001 (see section IV.C.4.a of this Fact Sheet). Therefore, this prohibition is necessary to ensure that the assumptions used to derive the dilution credit remain substantially the same so the limitations remain protective of water quality.

c. Discharge Prohibition III.C (No bypass of secondary treatment): This prohibition is based on 40 C.F.R. section 122.41(m) and U.S. EPA's *Combined Sewer Overflow Control Policy*. Bypass of secondary treatment is prohibited except during wet weather as defined in Attachment A or in accordance with 40 C.F.R. section §122.41(m) (see Attachment D section I.G.)

d. Discharge Prohibition III.D (No dry weather discharges at Discharge Point Nos. 002 through 043): This prohibition reflects the principle objective of U.S. EPA's *Combined Sewer overflow Control Policy* (i.e., to ensure that combined sewer discharges only result from wet weather and that such discharges only occur at specified locations). Dry weather discharges must receive full secondary treatment prior to discharge through Discharge Point No. 001.

e. Discharge Prohibition III.E (Average dry weather effluent flow not to exceed dry weather design capacity): This prohibition is based on the Southeast Plant's design

treatment capacity (i.e., the historic and tested reliability of the treatment plant). Exceeding the average dry weather flow design capacity could result in lowering the reliability of achieving compliance with water quality requirements.

This Order prohibits an average dry weather effluent flow greater than 85.4 MGD. The previous order prohibited an average dry weather flow greater than 84.5 MGD. That value was a typographical error. The prohibitions in earlier orders (e.g., Order No. R2-2002-0073) specified 85.4 MGD. Federal regulations allow correction of this error (40 C.F.R. § 122.63).

f. Discharge Prohibition III.F (No sewer overflows): Basin Plan Table 4-1, Discharge Prohibition 15, and the CWA prohibit the discharge of wastewater to surface waters except as authorized under an NPDES permit. Publicly owned treatment works must achieve secondary treatment at a minimum and any more stringent limitations necessary to meet water quality standards (33 U.S.C. § 1311[b][1][B and C]). A sanitary sewer or combined sewer overflow that results in the discharge of raw sewage or wastewater not meeting this Order's effluent limitations to surface waters is therefore prohibited under the CWA and the Basin Plan. This prohibition does not apply to combined sewer discharges explicitly authorized in this Order pursuant to U.S. EPA's *Combined Sewer Overflow Control Policy*.

2. Exception to Shallow Water and Dead-End Slough Discharge Prohibition

Basin Plan Table 4-1, Discharge Prohibition 1, prohibits discharges not receiving a minimum of 10:1 initial dilution and discharges to dead-end sloughs. Basin Plan section 4.2 provides for exceptions under certain circumstances:

- An inordinate burden would be placed on the Discharger relative to the beneficial uses protected, and an equivalent level of environmental protection can be achieved by alternate means;
- A discharge is approved as part of a reclamation project;
- Net environmental benefits will be derived as a result of the discharge; or
- A discharge is approved as part of a groundwater cleanup project.

Discharges to Discharge Point Nos. 001 and 003 through 006 receive a minimum of at least 10:1 dilution[1]; therefore, they are not subject this discharge prohibition. During wet weather, this Order grants an exception for discharges to Discharge Point Nos. 002 and 009 through 043 for the following reasons:

a. Wet weather discharges to Discharge Point Nos. 002 and 009 through 043 occur as a result of the Discharger's efforts to maximize treatment of sanitary and industrial wastewater *and* stormwater. To eliminate all combined sewer discharges would place an inordinate burden on the Discharger, which has invested heavily in infrastructure that

[1] Dilution at Discharge Point No. 001 is discussed in section IV.C.4.a of this Fact Sheet. Discharge Point Nos. 003 through 006 are located off of Piers 33 and 35 and discharge at a depth of about 10 feet below mean low low water (MLLW). In August 1973, the Discharger completed a study that estimated dilution ratios to be at least 10:1 at each outfall when discharging at a maximum flow of 170 MGD.

captures and treats most combined wastewater and stormwater. Providing additional deepwater discharge capacity is unwarranted for the relatively small portion of the combined wastewater not discharged to deep water. Such a burden would be wholly disproportional relative to the beneficial uses protected because this Order's requirements are sufficient to protect beneficial uses.

b. An equivalent level of environmental protection has been achieved because Provision VI.C.5 specifies controls that ensure the reliability of the Discharger's system in maximizing treatment and minimizing discharges not receiving at least 10:1 initial dilution. Combined sewer discharges at Discharge Point Nos. 009 through 043 receive equivalent-to-primary treatment, but before any combined sewer discharges occur, the Discharger optimizes discharges at Discharge Point Nos. 001 through 006. Discharges to Discharge Point Nos. 001 and 003 through 006 receive at least 10:1 dilution. When Discharge Point No. 001 (the Pier 80 deepwater outfall) is at capacity, the Discharger redirects only its highest quality effluent (secondary-treated wastewater) to Discharge Point No. 002.

Furthermore, in 1999 the Discharger took steps to enhance San Francisco Bay's beneficial uses by contributing $1 million to the Port of San Francisco to restore a 25-acre wetland at Heron's Head Park (Pier 98). Enhancing beneficial uses in this way provides environmental protection equivalent to providing at least 10:1 dilution for additional flows.

c. Net environmental benefits result from the operation of a combined sewer system. The system removes many pollutants in urban runoff, which elsewhere in the Region are discharged through stormwater outfalls with little or no treatment. For example, the system removes almost 2,000 tons, or 84 percent, of suspended sediment from the stormwater component of its influent each year (*Special Study Overflow Impacts and Efficacy of Combined Sewer Overflow Controls for the San Francisco Bayside System, Southeast Water Pollution Control Plant, North Point Wet Weather Facility and Bayside Wet Weather Facilities*, June 29, 2012).

B. Conventional and Non-Conventional Pollutant Effluent Limitations

1. Scope and Authority

a. Dry Weather Discharges. CWA section 301(b) and 40 C.F.R. section 122.44 require that permits include conditions meeting technology-based requirements at a minimum, and any more stringent effluent limitations necessary to meet water quality standards. The dry weather discharges authorized by this Order must meet minimum federal technology-based requirements based on Secondary Treatment Standards at 40 C.F.R. section 133 as summarized below. In addition, the 30-day average percent removal for biochemical oxygen demand (BOD_5) (or carbonaceous biochemical oxygen demand, $CBOD_5$) and total suspended solids (TSS), by concentration, is not to be less than 85 percent. The Basin Plan contains additional requirements for certain pollutants.

Table F-8. Secondary Treatment Requirements

Parameter	Monthly Average	Weekly Average
BOD_5	30 mg/L	45 mg/L
$CBOD_5$ [1]	25 mg/L	40 mg/L
TSS	30 mg/L	45 mg/L
pH	6.0 – 9.0 standard units [2]	

Footnotes:

[1] $CBOD_5$ effluent limitations may be substituted for BOD_5 limitations.

[2] The pH is to be between 6.0 and 9.0 unless inorganic chemicals are added during treatment or industrial sources cause the pH to be less than 6.0 or greater than 9.0.

b. Wet Weather Discharges. Discharges from combined sewer systems are point sources subject to NPDES permit requirements; however, such wet weather discharges are not subject to the Secondary Treatment Standards. The *Combined Sewer Overflow Control Policy* establishes technology-based requirements for combined sewer systems based on 40 C.F.R. section 125.3. The Policy requires the Discharger to implement Nine Minimum Controls, which represent the best conventional technology and best available technology economically achievable. Provision VI.C.5.b of this Order contains these requirements. This Order contains total residual chlorine and enterococcus limits for disinfected effluent from Discharge Point Nos. 001 through 006 to ensure proper operations and maintenance consistent with the Nine Minimum Controls.

2. Effluent Limitations

a. Dry Weather Discharges (Discharge Point No. 001)

i. BOD_5 and TSS. The dry weather BOD_5 and TSS effluent limitations, including the 85 percent removal requirements, are based on the Secondary Treatment Standards and Basin Plan Table 4-2.

ii. Oil and Grease. The oil and grease effluent limitations are based on Basin Plan Table 4-2.

iii. pH. The pH effluent limitations are based on the Secondary Treatment Standards and Basin Plan Table 4-2.

iv. Total Residual Chlorine. The total residual chlorine effluent limitation is based on Basin Plan Table 4-2. The allowance for determining false positives when using continuous devices is based on the fact that continuous instruments occasionally have anomalous spikes, and it is chemically improbable to have free chlorine present in the presence of sodium bisulfite.

v. Enterococcus. Basin Plan Table 4-2A requires the enterococcus effluent limitation for discharges to receiving waters with the water contact recreation beneficial use.

vi. Fecal Coliform. Basin Plan Table 4-2A requires total coliform effluent limitations for discharges to receiving waters with the shellfish harvesting beneficial use, but Basin Plan Table 4-2A, footnote c, allows substituting fecal coliform limitations for

total coliform limitations provided that the substitution will not result in unacceptable adverse impacts on beneficial uses. This Order contains the following fecal coliform effluent limits:

- The median fecal coliform density in any calendar month is not to exceed 500 MPN/100 mL); and
- no more than 10 percent of the samples in any calendar month may contain a fecal coliform density equal to or greater than 1,100 MPN/100 mL.

The Fact Sheet for Regional Water Board Order No. 94-149 attributes these limits to "recommendations for the Department of Health Services (Memorandum from Don Womeldorf, Chief Environmental Management Branch to James Baetge SWRCB dated Octover 24, 1990) and the initial dilution achieved at the Pier 80 Outfall."

These limits will not result in unacceptable adverse impacts on beneficial uses, including water contact recreation and shellfish harvesting. The enterococcus limit discussed above adequately protects water contact recreation. As for shellfish harvesting, Southeast Plant effluent is diluted at least 50:1 at the Pier 80 outfall (*Dilution Model for the San Francisco Southeast Treatment Plant Bay Outfall [Pier 80]*, December 6, 2007) and the nearest shellfish beds are near Candlestick Point, more than three miles away (*San Francisco Bay Subtidal Habitat Goals Report*, 2010). Basin Plan Table 3-1 contains a 30-day median fecal coliform objective of 14 MPN/100 mL and a 90th percentile fecal coliform objective of 43 MPN/100 mL to protect shellfish harvesting. Therefore, accounting for mixing and dilution, the fecal coliform limits in this Order will protect shellfish harvesting. Moreover, in April 1993, the Discharger decreased its chlorine residual for a time and observed that total coliform and fecal coliform levels near Candlestick Point remained equal to San Francisco Bay background levels ("NPDES Limits for Bacteria," *Water Environment & Technology*, Vol. 8, August 1996, pp 69-73). Other Lower San Francisco Bay dischargers have conducted similar receiving water impact studies and found no relationship between effluent and shoreline fecal coliform densities (City of San Mateo, November 1997; South Bayside System Authority, January 1998). Apparently, other fecal coliform sources (e.g., birds, wildlife, urban runoff) more directly affect shoreline fecal coliform levels. The studies evaluated a range of effluent discharges that included fecal coliform densities considerably higher than those allowed by this Order.

The Monitoring and Reporting Program requires weekly monitoring, but samples may be collected more frequently. The 10 percent requirement will be interpreted as follows. If up to nine samples are collected in a calendar month, a single sample with a fecal coliform density equal to or greater than 1,100 MPN/100 mL would violate the 10 percent limit; if 10 to 19 samples are collected, two samples at or above 1,100 MPN/100 mL would violate the limit; if 20 to 29 samples are collected, three samples at or above 1,100 MPN/100 mL would violate the limit; and if 30 or 31 samples are collected, four samples at or above 1,100 MPN/100 mL would violate the limit.

b. Wet Weather Discharges (Discharge Point Nos. 001 through 006)

i. Total Residual Chlorine. The total residual chlorine effluent limitation is based on Basin Plan Table 4-2, as guidance, to ensure that Southeast Plant and North Point Facility treatment, including disinfection, is conducted in a manner consistent with proper operations and maintenance as required by the Nine Minimum Controls. The allowance for determining false positives when using continuous devices accounts for the fact that continuous instruments occasionally have anomalous spikes, and it is chemically improbable to have free chlorine present in the presence of sodium bisulfite.

ii. Enterococcus. To ensure that Southeast Plant and North Point Facility disinfection is conducted in a manner consistent with proper operations and maintenance, as required by the Nine Minimum Controls, this Order contains an enterococcus effluent limitation. Disinfection performance is to be evaluated using a monthly geometric mean enterococcus limit of 35 MPN/100 mL, chosen based on the receiving water quality objective for water contact recreation in Basin Plan Table 3-1.

This Order does not retain the previous order's single-sample maximum enterococcus limit because, in the context of using single-sample maxima for enterococcus, U.S. EPA states in part:

> Other than in the beach notification and closure decision context, the geometrice mean is the more relevant value for ensuring that appropriate actions are taken to protect and improve water quality because it is a more reliable measure, being less subject to random variation, and more directly linked to the underlying studies on which the 1986 bacteria criteria were based. (69 Fed. Reg. 67224, November 16, 2004.)

This change is not subject to anti-backsliding requirements because the two limits reflect different averaging periods and both are consistent with Basin Plan Table 3-1 water quality objectives.

This Order also does not retain the previous order's fecal coliform limits. The enterococcus limit is sufficient to evaluate treatment performance. Anti-backsliding requirements do not apply because this Order replaces the fecal coliform limits with a new enterococcus limit; therefore, a direct comparison is impossible.

C. Toxic Pollutant Effluent Limitations

1. Scope and Authority

For toxic pollutants, this Order contains water quality-based effluent limitations (WQBELs) that implement water quality objectives that protect beneficial uses. CWA section 301(b) and 40 C.F.R. section 122.44(d) require that permits include limitations more stringent than federal technology-based requirements where necessary to achieve applicable water quality standards. According to 40 C.F.R. section 122.44(d)(1)(i), permits must include effluent limitations for all pollutants that are or may be discharged at levels that have a reasonable potential to cause or

contribute to an exceedance of a water quality standard, including numeric and narrative objectives within a standard. Where reasonable potential has been established for a pollutant, but there is no numeric criterion or objective, WQBELs must be established using (1) U.S. EPA criteria guidance under CWA section 304(a), supplemented where necessary by other relevant information; (2) an indicator parameter for the pollutant of concern; or (3) a calculated numeric water quality criterion, such as a proposed state criterion or policy interpreting a narrative criterion, supplemented with relevant information (40 C.F.R. § 122.44[d][1][vi]). The process for determining reasonable potential and calculating WQBELs is intended to achieve applicable water quality objectives and criteria and protect designated uses of receiving waters as specified in the Basin Plan.

During dry weather, this Order imposes numeric effluent limitations at Discharge Point No. 001 for toxic pollutants with reasonable potential to cause or contribute to exceedances of water quality standards. During wet weather, this Order imposes narrative effluent limitations for toxic pollutants, not numeric limitations. In accordance with the *Combined Sewer Overflow Control Policy*, this Order requires the Discharger to implement its Long-Term Control Plan to control combined sewer discharges and overflows. The plan calls for meeting CWA water quality-based requirements by providing a minimum level of treatment. The *Combined Sewer Overflow Control Policy* presumes that CWA water quality-based requirements will be met if the Discharger implements at least primary clarification of at least 85 percent of collected wastewater (unless data indicate otherwise). U.S. EPA describes this "presumption approach" as follows:

> A program that meets any of the criteria listed below would be presumed to provide an adequate level of control to meet the water quality-based requirements of the CWA, provided the permitting authority determines that such presumption is reasonable in light of the data and analysis conducted in the characterization, monitoring, and modeling of the system and the consideration of sensitive areas described above. These criteria are provided because data and modeling of wet weather events often do not give a clear picture of the level of [combined sewer overflow] controls necessary to protect [water quality standards].
>
> i. No more than an average of four overflow events per year, provided that the permitting authority may allow up to two additional overflow events per year. For the purpose of this criterion, an overflow event is one or more overflows from a CSS (Combined Sewer System) as the result of a precipitation event that does not receive the minimum treatment specified below; or
>
> ii. The elimination or the capture for treatment of no less than 85% by volume of the combined sewage collected in the Combined Sewer System during precipitation events on a system-wide annual average basis; or
>
> iii. The elimination or removal of no less than the mass of the pollutants, identified as causing water quality impairment through the sewer system characterization, monitoring, and modeling effort, for the volumes that would be eliminated or captured for treatment under paragraph ii above.

> Combined sewer overflows remaining after implementation of the nine minimum controls and within the criteria specified at [i or ii], should receive a minimum of:
>
> - Primary clarification (Removal of floatables and settleable solids may be achieved by any combination of treatment technologies or methods that are shown to be equivalent to primary clarification.);
>
> - Solids and floatables disposal; and
>
> - Disinfection of effluent, if necessary, to meet [water quality standards], protect designated uses and protect human health, including removal of harmful disinfection chemical residuals, where necessary."

The Discharger's Long-Term Control Plan exceeds the specifications for the presumption approach. The Discharger's system is designed to capture 100 percent of combined wastewater within the storage/transport boxes and to provide treatment consisting of floatables and settleable solids removal. Therefore, no untreated combined sewer overflows occur (combined sewer discharges receive equivalent-to-primary treatment). Provision VI.C.5.c of this Order requires the Discharger to continue implementing its Long-Term Control Plan.

2. Beneficial Uses and Water Quality Criteria and Objectives

Discharge Point No. 001 discharges to Lower San Francisco Bay. Section III.C.1, above, identifies the beneficial uses of Lower San Francisco Bay. Water quality criteria and objectives to protect these beneficial uses are described below:

a. Basin Plan Objectives. The Basin Plan specifies numeric water quality objectives for 10 priority pollutants and narrative water quality objectives for toxicity and bioaccumulation. The narrative toxicity objective states, "All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms." The narrative bioaccumulation objective states, "Controllable water quality factors shall not cause a detrimental increase in concentrations of toxic substances found in bottom sediments or aquatic life. Effects on aquatic organisms, wildlife, and human health will be considered."

b. CTR Criteria. The CTR specifies numeric aquatic life and human health criteria for numerous priority pollutants. These criteria apply to inland surface waters and enclosed bays and estuaries. Some human health criteria are for consumption of "water and organisms" and others are for consumption of "organisms only." The criteria applicable to "organisms only" apply to Lower San Francisco Bay because it is not a source of drinking water.

c. NTR Criteria. The NTR establishes numeric aquatic life and human health criteria for a number of toxic pollutants for San Francisco Bay waters upstream to and including Suisun Bay and the Sacramento-San Joaquin Delta. The NTR criteria apply to Lower San Francisco Bay.

d. Sediment Quality Objectives. The *Water Quality Control Plan for Enclosed Bays and Estuaries – Part 1, Sediment Quality* contains a narrative water quality objective: "Pollutants in sediments shall not be present in quantities that, alone or in combination, are toxic to benthic communities in bays and estuaries of California." This objective is to be implemented by integrating three lines of evidence: sediment toxicity, benthic community condition, and sediment chemistry. The policy requires that if the Regional Water Board determines that a discharge has reasonable potential to cause or contribute to an exceedance of this objective, it is to impose the objective as a receiving water limit.

e. Receiving Water Salinity. Basin Plan section 4.6.2 (like the CTR and NTR) states that the salinity characteristics (i.e., freshwater vs. saltwater) of the receiving water are to be considered in determining the applicable water quality objectives. Freshwater criteria apply to discharges to waters with salinities equal to or less than one part per thousand (ppt) at least 95 percent of the time. Saltwater criteria apply to discharges to waters with salinities equal to or greater than 10 ppt at least 95 percent of the time in a normal water year. For discharges to waters with salinities between these two categories, or tidally-influenced freshwaters that support estuarine beneficial uses, the water quality objectives are the lower of the salt or freshwater objectives (the latter calculated based on ambient hardness) for each substance.

Lower San Francisco Bay is a salt water environment based on salinity data generated through the Regional Monitoring Program (RMP). Salinity data collected at the Alameda (BB70) sampling location between 1993 and 2001 indicate that the salinity was greater than 10 ppt in 100 percent of the samples. Lower San Francisco Bay is therefore classified as saltwater, and the reasonable potential analysis and WQBELs are based on saltwater water quality criteria and objectives.

f. Site-Specific Metals Translators. Effluent limitations for metals must be expressed as total recoverable metal (40 C.F.R. § 122.45[c]). Since the water quality objectives for metals are typically expressed as dissolved metal, translators must be used to convert metals concentrations from dissolved to total recoverable and vice versa. The CTR contains default translators; however, site-specific conditions, such as water temperature, pH, suspended solids, and organic carbon may affect the form of metal (dissolved, non-filterable, or otherwise) present and therefore available to cause toxicity. In general, dissolved metals are more available and more toxic to aquatic life than other forms. Site-specific translators can account for site-specific conditions, thereby preventing overly stringent or under-protective water quality objectives. For copper, Basin Plan Table 7.2.1-2 contains site-specific translators for deep water discharges to Lower San Francisco Bay: 0.73 and 0.87 (monthly and daily). For nickel, this Order uses site-specific translators the Clean Estuary Partnership developed, as set forth in *North of Dumbarton Bridge Copper and Nickel Development and Selection of Final Translators* report (March 2005): 0.65 and 0.85 (monthly and daily). For silver, this Order uses a site-specific translator based on RMP data collected from 1993 through 2001 at the Alameda sampling station (BB70): 0.66.

3. Need for Water Quality-Based Effluent Limitations (Reasonable Potential Analysis)

Assessing whether a pollutant has reasonable potential to exceed a water quality objective is the fundamental step in determining whether a WQBEL is required.

a. Methodology. For dry weather discharges, SIP section 1.3 sets forth the methodogy used for this Order for assessing whether a pollutant has reasonable potential to exceed a water quality objective. The analysis begins with identifying the maximum effluent concentration (MEC) observed for each pollutant based on available effluent concentration data and the ambient background concentration (B). SIP section 1.4.3 states that ambient background concentrations are either the maximum ambient concentration observed or, for water quality objectives intended to protect human health, the arithmetic mean of observed concentrations.There are three triggers in determining reasonable potential:

i. Trigger 1 is activated if the maximum effluent concentration is greater than or equal to the lowest applicable water quality objective (MEC $\geq$ water quality objective).

ii. Trigger 2 is activated if the ambient background concentration observed in the receiving water is greater than the water quality objective (B > water quality objective) *and* the pollutant is detected in any effluent sample.

iii. Trigger 3 is activated if a review of other information indicates that a WQBEL is needed to protect beneficial uses.

b. Effluent Data. The reasonable potential analysis for this Order is based on effluent monitoring data the Discharger collected from April 2008 through September 2012. The copper data were collected from October 2009 through September 2012 because these more recent three years of data better represent current discharge conditions.

c. Ambient Background Data. The reasonable potential analysis for this Order is based on RMP data collected at the Yerba Buena Island station (BC10) from 1993 through 2011, and additional Bay Area Clean Water Agencies data from *San Francisco Bay Ambient Water Monitoring Interim Report* (2003) and *Ambient Water Monitoring: Final CTR Sampling Update* (2004). These reports contain monitoring results from 2002 and 2003 for priority pollutants the RMP did not monitor at the time. For ammonia, the ambient concentration at the RMP station nearest to the discharge point, the Alameda RMP station (BB70), was used because, as described in section IV.C.4.a.iii of this Fact Sheet, this Order grants full dilution credit for ammonia.

d. Reasonable Potential Analysis for Toxic Pollutants. The maximum effluent concentrations, most stringent applicable water quality criteria and objectives, and ambient background concentrations used in the analysis are presented in the following table, along with the reasonable potential analysis results (yes or no) for each pollutant. Reasonable potential was not determined for all pollutants because there are not water quality objectives for all pollutants, and monitoring data are unavailable for others. The pollutants that exhibit reasonable potential are copper, cyanide, dioxin-TEQ, 1,2-diphenylhydrazine, and total ammonia.

Table F-9. Reasonable Potential Analysis

CTR #	Priority Pollutants	Governing criterion or objective (µg/L)	MEC or Minimum DL [1][2] (µg/L)	B or Minimum DL [1][2] (µg/L)	Results [3]
1	Antimony	4,300	0.71	1.8	No
2	Arsenic	36	3.7	2.46	No
3	Beryllium	No Criteria	0.29	0.22	Ud
4	Cadmium	9.36	1.3	0.13	No
5a	Chromium (III)	No Criteria	3.7	4.4	No
5b	Chromium (VI)	50	1.4	4.4	No
6	**Copper**	**8.2**	**13**	**2.5**	**Yes**
7	Lead	8.5	1.6	0.80	No
8	Mercury (303(d) listed) [4]	---	---	---	---
9	Nickel	13	5.1	3.7	No
10	Selenium (303(d) listed)	5	1.2	0.39	No
11	Silver	2.9	2.6	0.052	No
12	Thallium	6.3	0.18	0.21	No
13	Zinc	86	55	5.1	No
14	**Cyanide**	**2.9**	**9.5**	**< 0.4**	**Yes**
15	Asbestos	No Criteria	Unavailable	Unavailable	Ud
16	2,3,7,8-TCDD (303(d) listed)	$1.40x10^{-8}$	$< 3.5x10^{-7}$	$8.2x10^{-9}$	No
	Dioxin-TEQ (303(d) listed)	**$1.40x10^{-8}$**	**$2.2x10^{-9}$**	**$5.3x10^{-8}$**	**Yes**
17	Acrolein	780	< 1.0	< 0.5	No
18	Acrylonitrile	0.66	< 0.80	0.03	No
19	Benzene	71	< 0.051	< 0.05	No
20	Bromoform	360	< 0.078	< 0.5	No
21	Carbon Tetrachloride	4.4	< 0.068	0.06	No
22	Chlorobenzene	21,000	< 0.052	< 0.5	No
23	Chlorodibromomethane	34	0.48	< 0.05	No
24	Chloroethane	No Criteria	1.1	< 0.5	Ud
25	2-Chloroethylvinyl ether	No Criteria	< 0.095	< 0.5	Ud
26	Chloroform	No Criteria	11	< 0.5	Ud
27	Dichlorobromomethane	46	1.1	< 0.05	No
28	1,1-Dichloroethane	No Criteria	< 0.047	< 0.05	Ud
29	1,2-Dichloroethane	99	< 0.052	0.04	No
30	1,1-Dichloroethylene	3.2	< 0.038	< 0.5	No
31	1,2-Dichloropropane	39	< 0.038	< 0.05	No
32	1,3-Dichloropropylene	1,700	< 0.054	< 0.5	No
33	Ethylbenzene	29,000	0.11	< 0.5	No
34	Methyl Bromide	4,000	< 0.067	< 0.5	No
35	Methyl Chloride	No Criteria	1.1	< 0.5	Ud
36	Methylene Chloride	1,600	3.3	22	No
37	1,1,2,2-Tetrachloroethane	11	< 0.064	< 0.05	No
38	Tetrachloroethylene	8.85	0.79	< 0.05	No
39	Toluene	200,000	1.5	< 0.3	No
40	1,2-Trans-Dichloroethylene	140,000	< 0.062	< 0.5	No
41	1,1,1-Trichloroethane	No Criteria	< 0.064	< 0.5	Ud
42	1,1,2-Trichloroethane	42	< 0.053	< 0.05	No
43	Trichloroethylene	81	0.25	< 0.5	No
44	Vinyl Chloride	525	1.2	< 0.5	No
45	2-Chlorophenol	400	< 0.15	< 1.2	No
46	2,4-Dichlorophenol	790	0.75	< 1.3	No
47	2,4-Dimethylphenol	2,300	< 0.22	< 1.3	No
48	2-Methyl- 4,6-Dinitrophenol	765	< 0.33	< 1.2	No
49	2,4-Dinitrophenol	14,000	< 0.23	< 0.7	No

CTR #	Priority Pollutants	Governing criterion or objective (µg/L)	MEC or Minimum DL [1][2] (µg/L)	B or Minimum DL [1][2] (µg/L)	Results [3]
50	2-Nitrophenol	No Criteria	< 0.20	< 1.3	Ud
51	4-Nitrophenol	No Criteria	< 0.27	< 1.6	Ud
52	3-Methyl 4-Chlorophenol	No Criteria	< 0.21	< 1.1	Ud
53	Pentachlorophenol	7.9	< 0.23	< 1	No
54	Phenol	4,600,000	< 0.20	< 1.3	No
55	2,4,6-Trichlorophenol	6.5	0.94	< 1.3	No
56	Acenaphthene	2,700	0.034	0.0019	No
57	Acenaphthylene	No Criteria	< 0.044	0.0013	Ud
58	Anthracene	110,000	0.0011	0.00059	No
59	Benzidine	0.00054	< 0.42	< 0.0015	No
60	Benzo(a)Anthracene	0.049	0.0034	0.0053	No
61	Benzo(a)Pyrene	0.049	< 0.0020	0.0033	No
62	Benzo(b)Fluoranthene	0.049	0.0024	0.0046	No
63	Benzo(ghi)Perylene	No Criteria	< 0.0016	0.0045	Ud
64	Benzo(k)Fluoranthene	0.049	< 0.0016	0.0018	No
65	Bis(2-Chloroethoxy)Methane	No Criteria	< 0.24	< 0.3	Ud
66	Bis(2-Chloroethyl)Ether	1.4	< 0.19	< 0.00015	No
67	Bis(2-Chloroisopropyl)Ether	170,000	< 0.19	Unavailable	No
68	Bis(2-Ethylhexyl)Phthalate	5.9	1.7	< 0.7	No
69	4-Bromophenyl Phenyl Ether	No Criteria	< 0.12	< 0.23	Ud
70	Butylbenzyl Phthalate	5,200	0.47	0.0056	No
71	2-Chloronaphthalene	4,300	< 0.20	< 0.3	No
72	4-Chlorophenyl Phenyl Ether	No Criteria	< 0.24	< 0.3	Ud
73	Chrysene	0.049	0.0018	0.0028	No
74	Dibenzo(a,h)Anthracene	0.049	< 0.0010	0.00064	No
75	1,2-Dichlorobenzene	17,000	0.57	< 0.3	No
76	1,3-Dichlorobenzene	2,600	0.46	< 0.3	No
77	1,4-Dichlorobenzene	2,600	0.66	< 0.3	No
78	3,3 Dichlorobenzidine	0.077	< 0.41	< 0.001	No
79	Diethyl Phthalate	120,000	0.35	< 0.21	No
80	Dimethyl Phthalate	2,900,000	< 0.29	< 0.21	No
81	Di-n-Butyl Phthalate	12,000	1.0	0.016	No
82	2,4-Dinitrotoluene	9.1	< 0.23	< 0.27	No
83	2,6-Dinitrotoluene	No Criteria	< 0.16	< 0.29	Ud
84	Di-n-Octyl Phthalate	No Criteria	< 0.36	< 0.38	Ud
85	**1,2-Diphenylhydrazine**	**0.54**	**1.1**	**0.0037**	**Yes**
86	Fluoranthene	370	< 0.0092	0.011	No
87	Fluorene	14,000	0.0052	0.00208	No
88	Hexachlorobenzene	0.00077	< 0.15	0.000022	No
89	Hexachlorobutadiene	50	< 0.15	< 0.3	No
90	Hexachlorocyclopentadiene	17,000	< 0.11	< 0.3	No
91	Hexachloroethane	8.9	< 0.13	< 0.2	No
92	Indeno(1,2,3-cd)Pyrene	0.049	< 0.0020	0.0040	No
93	Isophorone	600	< 0.23	< 0.3	No
94	Naphthalene	No Criteria	< 0.017	0.013	Ud
95	Nitrobenzene	1,900	< 0.20	< 0.25	No
96	N-Nitrosodimethylamine	8.1	< 0.060	< 0.3	No
97	N-Nitrosodi-n-Propylamine	1.4	< 0.21	< 0.001	No
98	N-Nitrosodiphenylamine	16	< 0.090	< 0.001	No
99	Phenanthrene	No Criteria	0.029	0.0095	Ud
100	Pyrene	11,000	0.011	0.019	No
101	1,2,4-Trichlorobenzene	No Criteria	< 0.20	< 0.3	Ud

CTR #	Priority Pollutants	Governing criterion or objective (µg/L)	MEC or Minimum DL [1][2] (µg/L)	B or Minimum DL [1][2] (µg/L)	Results [3]
102	Aldrin	0.00014	< 0.00075	0.0000028	No
103	Alpha-BHC	0.013	< 0.00059	0.00050	No
104	Beta-BHC	0.046	< 0.00040	0.00041	No
105	Gamma-BHC	0.063	< 0.00050	0.00070	No
106	Delta-BHC	No Criteria	< 0.00051	0.000053	Ud
107	Chlordane (303(d) listed)	0.00059	< 0.0090	0.00018	No
108	4,4'-DDT (303(d) listed)	0.00059	< 0.00093	0.00017	No
109	4,4'-DDE (linked to DDT)	0.00059	< 0.00038	0.00069	No
110	4,4'-DDD	0.00084	< 0.0021	0.00031	No
111	Dieldrin (303d listed)	0.00014	< 0.00056	0.00026	No
112	Alpha-Endosulfan	0.0087	< 0.00048	0.000031	No
113	beta-Endosulfan	0.0087	< 0.00071	0.000069	No
114	Endosulfan Sulfate	240	< 0.0028	0.000082	No
115	Endrin	0.0023	< 0.00091	0.00004	No
116	Endrin Aldehyde	0.81	< 0.00089	Unavailable	No
117	Heptachlor	0.00021	< 0.00099	0.000019	No
118	Heptachlor Epoxide	0.00011	< 0.00050	0.000094	No
119-125	PCBs sum (303(d) listed) [4]	---	---	---	---
126	Toxaphene	0.0002	< 0.032	Unavailable	No
	Tributyltin	0.0074	< 0.00036	Unavailable	No
	Total PAHs	15	Unavailable	0.013	Ud
	Total Ammonia [5]	**1.1**	**42**	**0.22**	**Yes**

Footnotes:

[1] The maximum effluent concentration and ambient background concentration are the actual detected concentrations unless preceded by a "<" sign, in which case the value shown is the minimum detection level (DL).

[2] The maximum effluent concentration or ambient background concentration is "Unavailable" when there are no monitoring data for the constituent.

[3] RPA Results = Yes, if MEC ≥ WQC, B > WQC and MEC is detected, or Trigger 3
= No, if MEC and B are < WQC or all effluent data are undetected
= Undetermined (Ud), if no criteria have been promulgated or data are insufficient.

[4] SIP section 1.3 excludes from its reasonable potential analysis procedure priority pollutants for which a TMDL has been developed. TMDLs have been developed for mercury and PCBs in San Francisco Bay. Mercury and PCBs from wastewater discharges are regulated by NPDES Permit No. CA0038849, which implements the San Francisco Bay Mercury and PCBs TMDLs.

[5] Units for total ammonia are milligrams per liter as nitrogen.

e. Reasonable Potential Analysis for Sediment Quality. Pollutants in some receiving water sediments may be present in quantities that alone or in combination are toxic to benthic communities. Efforts are underway to identify stressors causing such conditions. However, to date there is no evidence directly linking compromised sediment conditions to the discharges subject to this Order; therefore, the Regional Water Board cannot draw a conclusion about reasonable potential for these discharges to cause or contribute to exceedances of the sediment quality objectives. Nevertheless, the Discharger continues to participate in the RMP, which monitors San Francisco Bay sediment and seeks to identify stressors responsible for degraded sediment quality. Thus far, the monitoring has provided only limited information about potential stressors and sediment transport. The Regional Water Board is exploring options for obtaining additional information that may inform future analyses.

f. Constituents with limited data. In some cases, reasonable potential cannot be determined because effluent data are limited or ambient background concentrations are unavailable. Provision VI.C.2 of the Order requires the Discharger to continue monitoring for these constituents in its effluent using analytical methods that provide the best feasible detection limits. When additional data become available, further analysis will be conducted to determine whether numeric effluent limitations are necessary.

g. Pollutants with No Reasonable Potential. This Order does not contain WQBELs for constituents that do not demonstrate reasonable potential; however, Provision VI.C.2 of the Order still requires monitoring for those pollutants. If concentrations are found to have increased significantly, Provision VI.C.2 of the Order requires the Discharger to investigate the sources of the increases and implement remedial measures if the increases pose a threat to receiving water quality.

4. Water Quality-Based Effluent Limitations

For dry weather discharges, WQBELs were developed for the pollutants determined to have reasonable potential to cause or contribute to exceedances of water quality objectives. The WQBELs are based on the procedures specified in SIP section 1.4.

a. Dilution Credits. SIP section 1.4.2 allows dilution credits under certain circumstances. The Discharger submitted a dilution study titled *Dilution Model for the San Francisco Southeast Treatment Plant Bay Outfall (Pier 80)*, dated December 6, 2007. The study contains estimates of initial dilution based on the UM3 model as implemented with the U.S. EPA-supported Visual PLUMES modeling package. The study used the average dry weather flow, 62 MGD, to estmate the initial dilution representing chronic (long-term average) conditions, and the 95th percentile of dry weather flows, 72 MGD, to calculate the initial dilution representing acute (short-term) conditions. Estimated initial dilution ratios are 231:1 (230 parts ambient water to one part effluent) at 62 MGD and 51:1 at 72 MGD.

i. Bioaccumulative Pollutants. For certain bioaccumulative pollutants, dilution credit is significantly restricted or denied. Specifically, these pollutants include dioxin and furan compounds, which appear on the CWA section 303(d) list for Lower San Francisco Bay because, based on available data on the concentrations of these pollutants in aquatic organisms, sediment, and the water column, they impair San Francisco Bay beneficial uses. The following factors suggest insufficient assimilative capacity in San Francisco Bay for these pollutants.

Tissue samples taken from San Francisco Bay fish show the presence of these pollutants at concentrations greater than screening levels (*Contaminant Concentrations in Fish from San Francisco Bay*, May 1997). The results of a 1994 San Francisco Bay pilot study, presented in *Contaminated Levels in Fish Tissue from San Francisco Bay* (Regional Water Board, 1994) also show elevated levels of chemical contaminants in fish tissues. The Office of Environmental Health and Hazard Assessment (OEHHA) completed a preliminary review of the data in the 1994 report and in December 1994 issued an interim consumption advisory covering certain fish species in San Francisco Bay due to the levels of some of these pollutants.

OEHHA updated this advisory in a May 2011 report, *Health Advisory and Safe Eating Guidelines for San Francisco Bay Fish and Shellfish*, which still suggests insufficient assimilative capacity in San Francisco Bay for 303(d)-listed pollutants. Therefore, dilution credits are denied for bioaccumulative pollutants on the 303(d) list for which data are lacking on sources and significant uncertainty exists about how different sources contribute to bioaccumulation.

ii. Non-Bioaccumulative Pollutants (except ammonia). For non-bioaccumulative pollutants (except ammonia), a conservative dilution credit of 10:1 (D = 9) has been assigned. The 10:1 dilution credit is based, in part, on Basin Plan Prohibition 1 (Table 4-1), which prohibits discharges with less than 10:1 dilution. SIP section 1.4.2 allows for limiting the dilution credit. The dilution credit is limited for the following reasons:

(a) San Francisco Bay is a complex estuarine system with highly variable and seasonal upstream freshwater inflows and diurnal tidal saltwater inputs. SIP section 1.4.3 allows background conditions to be determined on a discharge-by-discharge or water body-by-water body basis. A water body-by-water body approach is taken here due to inherent uncertainties in characterizing ambient background conditions in a complex estuarine system on a discharge-by-discharge basis.

(b) Because of the complex hydrology of San Francisco Bay, there are uncertainties in accurately determining an appropriate mixing zone. The models used to predict dilution do not consider the three dimensional nature of San Francisco Bay currents resulting from the interaction of tidal flushes and seasonal fresh water outflows. Being heavier and colder than fresh water, ocean salt water enters San Francisco Bay on a twice-daily tidal cycle, generally beneath the warmer fresh water that flows seaward. When these waters mix and interact, complex circulation patterns occur due to the varying densities of the fresh and ocean waters. The complex patterns occur throughout San Francisco Bay, but are most prevalent in San Pablo Bay, Carquinez Strait, and Suisun Bay. The locations of this mixing and interaction change, depending on the strength of each tide. Additionally, sediment loads from the Central Valley change on a long-term basis, affecting the depth of different parts of San Francisco Bay, resulting in alteration of flow patterns, mixing, and dilution at the outfall.

For non-bioaccumultive pollutants (except ammonia), the Yerba Buena Island RMP monitoring station (BC10), relative to other RMP stations, fits SIP guidance for establishing background conditions. SIP section 1.4.3 requires that background water quality data be representative of the ambient receiving water that will mix with the discharge. Because the WQBELs for non-bioaccumultive pollutants (except ammonia) are based on a restricted dilution credit, water quality data from the Yerba Buena Island monitoring station best represents the water that will mix with the discharge.

iii. Ammonia. For ammonia, a conservative estimate of actual initial dilution was used to calculate the effluent limitations. This is justified because ammonia, a non-

persistent pollutant, quickly disperses and degrades to a non-toxic state, and cumulative toxicity is unlikely. The 231:1 dilution ratio is appropriate for calculating limits based on the chronic water quality objective because that objective is an annual median; the dilution ratio associtated with the long-term average flow best represents long-term (chronic) conditions. The 51:1 dilution ratio is appropriate for calculating limits based on the acute water quality objective because that objective is an absolute maximum; the dilution associated with the maximum flow best represents short-term (acute) conditions.

For ammonia, the Alameda RMP monitoring station (BB70), relative to other RMP stations, fits SIP guidance for establishing background conditions. SIP section 1.4.3 requires that background water quality data be representative of the ambient receiving water that will mix with the discharge. Because the ammonia WQBELs are based on actual dilution at the edge of the initial mixing zone, data from the Alameda RMP station best represents the water at the edge of the initial mixing zone.

b. WQBEL Development. For those pollutants with reasonable potential, average monthly effluent limitations (AMELs) and maximum daily effluent limitations (MDELs) were developed as explained below:

i. Copper

(a) Water Quality Objectives. Basin Plan Table 3-3A contains chronic and acute marine water quality objectives for copper of 6.0 and 9.4 µg/L (site-specific objectives for San Francisco Bay), expressed as dissolved metal and accounting for a Water Effects Ratio of 2.4. Converting these water quality objectives to total recoverable metal using the site-specific translators of 0.73 (chronic) and 0.87 (acute) results in water quality criteria of 8.2 µg/L (chronic) and 10.8 µg/L (acute).

(b) Reasonable Potential Analysis. This Order establishes copper WQBELs because the maximum effluent concentration (13 µg/L) exceeds the governing water quality objective (8.2 µg/L), demonstrating reasonable potential by Trigger 1, and because Basin Plan section 7.2.1.2 requires that individual NPDES permits for municipal and industrial wastewater treatment facilities include copper WQBELs.

(c) WQBELs. Copper WQBELs, calculated according to SIP procedures with an effluent data coefficient of variation of 0.28 and a dilution credit of D = 9 (dilution ratio = 10:1), are an AMEL of 53 µg/L and an MDEL of 76 µg/L.

(d) Anti-backsliding. Anti-backsliding requirements are satisfied because this Order's copper WQBELs are the same as those in the previous order.

ii. Cyanide

(a) Water Quality Objectives. Basin Plan Table 3-3C contains chronic and acute marine water quality objectives for cyanide of 2.9 µg/L and 9.4 µg/L (site-specific objectives for San Francisco Bay).

(b) Reasonable Potential Analysis. This Order establishes cyanide WQBELs because the maximum effluent concentration (9.5 µg/L) exceeds the governing water quality objective (2.9 µg/L), demonstrating reasonable potential by Trigger 1.

(c) WQBELs. Cyanide WQBELs, calculated according to SIP procedures with an effluent data coefficient of variation of 0.80 and a dilution credit of D = 9, are an AMEL of 20 µg/L and an MDEL of 45 µg/L. This MDEL is less stringent than the one in the previous order (43 µg/L); therefore, this Order retains the previous MDEL to avoid backsliding.

(d) Anti-backsliding. Anti-backsliding requirements are satisfied because this Order's cyanide WQBELs are at least as stringent as those in the previous order.

iii. Dioxin-TEQ

(a) Water Quality Objective. The Basin Plan narrative water quality objective for bioaccumulative substances states, "Many pollutants can accumulate on particulates, in sediments, or bioaccumulate in fish and other aquatic organisms. Controllable water quality factors shall not cause a detrimental increase in concentrations of toxic substances found in bottom sediments or aquatic life. Effects on aquatic organisms, wildlife, and human health will be considered."

Because it is the consensus of the scientific community that dioxins and furans associate with particulates, accumulate in sediments, and bioaccumulate in the fatty tissue of fish and other organisms, the Basin Plan's narrative bioaccumulation water quality objective applies to these pollutants. Elevated levels of dioxins and furans in San Francisco Bay fish tissue demonstrate that the narrative bioaccumulation water quality objective is not being met. U.S. EPA has therefore placed Lower San Francisco Bay on its 303(d)-list of receiving waters where water quality objectives are not being met after imposition of applicable technology-based requirements.

When the CTR was promulgated, U.S. EPA stated its support of the regulation of dioxin and dioxin-like compounds through the use of toxicity equivalencies (TEQs). U.S. EPA stated, "For California waters, if the discharge of dioxin or dioxin-like compounds has reasonable potential to cause or contribute to a violation of a narrative criterion, numeric WQBELs for dioxin or dioxin-like compounds should be included in NPDES permits and should be expressed using a TEQ scheme" (65 Fed. Reg. 31695-31696, May 18, 2000). This Order uses a TEQ scheme based on a set of toxicity equivalency factors (TEFs) the World Health Organization developed in 1998, and a set of bioaccumulation equivalency factors (BEFs) U.S. EPA developed for the Great Lakes region (40 C.F.R. part 132, Appendix F) to convert the concentration of any congener of dioxin or furan into an equivalent concentration of 2,3,7,8-tetrachlorinated dibenzo-p-dioxin (2,3,7,8-TCDD). Although the 1998 World Health Organization scheme includes TEFs for dioxin-like PCBs, they are not included in this Order's TEQ scheme.

The CTR has established a specific water quality criterion for PCBs, and dioxin-like PCBs are included in the analysis of total PCBs.

The CTR establishes a numeric water quality objective for 2,3,7,8-TCDD of 1.4×10^{-8} µg/L for the protection of human health when aquatic organisms are consumed. The CTR criterion is used as a criterion for dioxin-TEQ because dioxin-TEQ represents a toxicity weighted concentration equivalent to 2,3,7,8-TCDD, thus translating the narrative bioaccumulation objective into a numeric criterion.

(b) Reasonable Potential Analysis. TEFs and BEFs were used to express measured concentrations of 16 dioxin congeners in effluent and background samples as equivalent 2,3,7,8-TCDD concentrations. For each sample, the sum of these equivalent concentrations is the dioxin-TEQ concentration. This Order establishes dioxin-TEQ WQBELs because the ambient background receiving water dioxin-TEQ concentration (5.3×10^{-8} µg/L) exceeds the CTR numeric criterion for 2,3,7,8-TCDD (1.4×10^{8} µg/L) and dioxin-TEQ was detected in the effluent, demonstrating reasonable potential by Trigger 2.

(c) WQBELs. Dioxin-TEQ WQBELs, calculated according to SIP procedures with a default coefficient of variation of 0.60 and no dilution credit, are an AMEL of 1.4×10^{-8} µg/L and an MDEL of 2.8×10^{-8} µg/L.

(d) Anti-backsliding. The previous order contained an annual mass-based dioxin-TEQ effluent limit based on a dry weather flow of 85.4 MGD and a monthly average effluent concentration of 1.4×10^{-8} µg/L. Anti-backsliding requirements are satisfied because this Order's dioxin-TEQ WQBELs are as stringent as the previous mass-based limitation (the new AMEL is the same as the concentration used to derive the prevous mass-based limit).

iv. 1,2-Diphenylhydrazine

(a) Water Quality Objectives. The CTR contains a human health water quality criterion for 1,2-diphenylhydrazine of 0.54 µg/L when organisms only (not water) are consumed from the receiving water.

(b) Reasonable Potential Analysis. This Order establishes WQBELs for 1,2-diphenylhydrazine because the maximum effluent concentration (1.1 µg/L) exceeds the governing water quality objective (0.54 µg/L), demonstrating reasonable potential by Trigger 1.

(c) WQBELs. WQBELs for 1,2-diphenylhydrazine, calculated according to SIP procedures with a default coefficient of variation of 0.60 and a dilution credit of D = 9, are an AMEL of 5.4 µg/L and an MDEL of 11 µg/L.

(d) Anti-backsliding. Anti-backsliding requirements are satisfied because the previous order did not contain 1,2-diphenylhydrazine limitations.

v. Ammonia

(a) Water Quality Objectives. The discharge into Lower San Francisco Bay occurs south of the San Francisco Bay Bridge. For these waters, Basin Plan section 3.3.20 contains water quality objectives for un-ionized ammonia of 0.025 mg/L as an annual median and 0.4 mg/L as a maximum. These objectives were translated from un-ionized ammonia concentrations to equivalent total ammonia concentrations (as nitrogen) since (1) sampling and laboratory methods are unavailable to analyze for un-ionized ammonia, and (2) the fraction of total ammonia that exists in the toxic un-ionized form depends on the pH, salinity, and temperature of the receiving water.

To translate the un-ionized ammonia objectives, pH, salinity, and temperature data were obtained from the RMP station nearest to the outfall (Alameda station, BB70). The un-ionized fraction of total ammonia was calculated as follows:

$$\text{For salinity} > 10 \text{ ppt: fraction of } NH_3 = \frac{1}{1+10^{(pK-pH)}}$$

Where:

$$pK = 9.245 + 0.116(I) + 0.0324\,(298 - T) + \frac{0.0415(P)}{(T)}$$

$$I = \text{Molal ionic strength of saltwater} = \frac{19.9273(S)}{(1{,}000 - 1.005109(S))}$$

S = Salinity (parts per thousand)

T = Temperature (degrees Kelvin)

P = Pressure (one atmosphere)

The median and 90th percentile un-ionized ammonia fractions were then used to express the daily maximum and the annual average un-ionized objectives as chronic and acute total ammonia criteria. This approach is consistent with U.S. EPA guidance on translating dissolved metal water quality objectives to total recoverable metal water quality objectives (U.S. EPA, 1996, *The Metals Translator: Guidance for Calculating a Total Recoverable Limit from a Dissolved Criterion*, EPA Publication 823-B-96-007).

The equivalent total ammonia chronic and acute criteria are 1.1 mg/L and 8.5 mg/L as nitrogen.

(b) Reasonable Potential Analysis. This Order relies on the SIP methodology as guidance to perform the reasonable potential analysis. This Order establishes total ammonia WQBELs because the maximum effluent concentration (42 mg/L as nitrogen) exceeds the governing water quality criterion (1.1 mg/L as nitrogen), demonstrating reasonable potential by Trigger 1.

(c) WQBELs. This Order relies on the SIP methodology as guidance to calculate the total ammonia WQBELs. The WQBELs are the more stringent AMEL and MDEL based on independent calculations using the chronic and acute objectives. To calculate an AMEL and MDEL based on the chronic objective, the median background concentration at the Alameda RMP station (BB70) (0.11 mg/L) and the minimum dilution based on the average flow (231:1) were used. To calculate an AMEL and MDEL based on the acute objective, the maximum background concentration (0.22 mg/L) and the minimum dilution based on the maximum flow (51:1) were used. Because the Basin Plan's chronic un-ionized ammonia objective is an annual median, the median background concentration and long-term average dilution represent ambient conditions better than a daily maximum concentration and minimum dilution.

The total ammonia WQBELs in this Order are based on the chronic objective. Calculated using an effluent data coefficient of variation of 0.15 and a dilution credit of D = 230, they are an AMEL of 220 mg/L and an MDEL of 300 mg/L.

Statistical adjustments were made to the total ammonia WQBEL calculations. The SIP assumes a 4-day average concentration and a monthly sampling frequency of 4 days per month to calculate effluent limitations based on chronic criteria, but the Basin Plan's chronic water quality objective for un-ionized ammonia is based on an annual median instead of the typical 4-day average. Therefore, a 365-day average and a monitoring frequency of 30 days per month (the maximum daily sampling frequency in a month since the averaging period for the chronic criteria is longer than 30 days) were used. These statistical adjustments are supported by U.S. EPA's *Water Quality Criteria; Notice of Availability; 1999 Update of Ambient Water Quality Criteria for Ammonia* (64 Fed. Reg. 71974-71980, December 22, 1999).

The newly calculated AMEL and MDEL are less stringent than those in the previous order (190 µg/L and 290 µg/L); therefore, this Order retains the previous AMEL and MDEL to avoid backsliding.

(d) Anti-backsliding. Anti-backsliding requirements are satisfied because this Order's total ammonia WQBELs are the same as those in the previous order.

(e) Growing Regional Concern with Nutrients. As described above and in section IV.C.4.a.iii of this Fact Sheet, a translated Basin Plan un-ionized ammonia objective and a conservative estimate of actual initial dilution were used to calculate the total ammonia effluent limitations. In the future, the Regional Water Board may grant less dilution credit or change the ammonia limitations in other ways to address growing concerns about nutrients in the receiving water. Currently, a region-wide effort is underway to study and evaluate potential effects. This effort, which is referred to as the San Francisco Bay Nutrient Strategy, includes developing a nutrient assessment framework that can be used to calculate WQBELs for nutrients. The Regional Water Board, through its Executive Officer, has also required wastewater dischargers, including this Discharger, to monitor nutrients, including ammonia, in their influent and

effluent. This information will be used to compare nutrient loads from wastewater discharges to loads from other sources, to support modeling and evaluation of load reduction scenarios, and to determine the need for additional wastewater treatment to address nutrients.

c. Effluent Limit Calculations. The following table shows the WQBEL calculations:

Table F-10. WQBEL Calculations

PRIORITY POLLUTANTS	Copper	Cyanide	Dioxin TEQ	1,2-Diphenyl-hydrazine	Total Ammonia (acute)	Total Ammonia (chronic)
Units	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**mg/L N**	**mg/L N**
Basis and Criteria type	Basin Plan SSO	Basin Plan SSO	Basin Plan Narrative	CTR Human Health	Basin Plan Aquatic Life	Basin Plan Aquatic Life
Criteria -Acute	-----	-----	-----	-----	8.5	-----
Criteria -Chronic	-----	-----	-----	-----	-----	1.05
SSO Criteria -Acute	9.4	9.4	-----	-----	-----	-----
SSO Criteria -Chronic	6.0	2.9	-----	-----	-----	-----
Water Effects ratio (WER)	1	1	1	1	1	1
Lowest water quality objective	6.0	2.9	1.4E-08	0.54	8.5	1.05
Site Specific Translator - MDEL	0.87	-----	-----	-----	-----	-----
Site Specific Translator - AMEL	0.73	-----	-----	-----	-----	-----
Dilution Factor (D)	9	9	0	9	50	230
No. of samples per month	4	4	4	4	4	30
Aquatic life criteria analysis required? (Y/N)	Y	Y	N	N	Y	Y
HH criteria analysis required? (Y/N)	N	Y	Y	Y	N	N
Applicable Acute water quality objective	10.8	9.4	-----	-----	9	-----
Applicable Chronic water quality objective	8.2	2.9	-----	-----	-----	1.1
HH criteria	-----	220000	1.4E-08	0.54	-----	-----
Background (Maximum Conc for Aquatic Life calc)	2.5	0.4	-----	-----	0.22	0.11
Background (Average Conc for Human Health calc)	-----	0.4	5.3E-08	3.7E-03	-----	-----
Is the pollutant on the 303d list (Y/N)?	N	N	Y	N	N	N
ECA acute	85	90	-----	-----	424	
ECA chronic	59	25	-----	-----	-----	218
ECA HH	-----	2.2E+06	1.4E-08	5.4	-----	-----
No. of data points <10 or at least 80% of data reported non detect? (Y/N)	N	N	N	Y	N	N
Average of effluent data	6.0	1.9	N/A	0.22	35	35
Standard Deviation of effluent data	1.7	1.5	N/A	0.28	5.2	5.2
CV calculated	0.28	0.80	N/A	N/A	0.15	0.15
CV (Selected) - Final	0.28	0.80	0.60	0.60	0.15	0.15
ECA acute mult99	0.55	0.25	-----	-----	0.72	-----
ECA chronic mult99	0.73	0.44	-----	-----	-----	0.98
LTA acute	47	23	-----	-----	305	-----
LTA chronic	43	11	-----	-----	-----	214
minimum of LTAs	43	11	-----	-----	305	214

PRIORITY POLLUTANTS	Copper	Cyanide	Dioxin TEQ	1,2-Diphenyl-hydrazine	Total Ammonia (acute)	Total Ammonia (chronic)
AMEL mult95	1.2	1.8	1.6	1.6	1.1	1.0
MDEL mult99	1.8	4.0	3.1	3.1	1.4	1.4
AMEL (aq life)	54	20	-----	-----	340	220
MDEL(aq life)	79	45	-----	-----	420	300
MDEL/AMEL Multiplier	1.5	2.3	2.0	2.0	1.2	1.3
AMEL (human hlth)	-----	2.2E+06	1.4E-08	5.4	-----	-----
MDEL (human hlth)	-----	5.0E+06	2.8E-08	11	-----	-----
minimum of AMEL for Aq. life vs HH	54	20	1.4E-08	5.4	340	220
minimum of MDEL for Aq. Life vs HH	79	43	2.8E-08	11	420	300
AMEL in previous order	53	20	-----	-----	190	190
MDEL in previous order	76	43	-----	-----	290	290
Final limit - AMEL	53	20	1.4E-08	5.4	190	190
Final limit - MDEL	76	43	2.8E-08	11	290	290

5. Whole Effluent Acute Toxicity

This Order includes dry weather effluent limitations for whole effluent acute toxicity based on Basin Plan Table 4-3. All bioassays are to be performed according to the U.S. EPA approved method in 40 C.F.R. section 136, currently *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms*, 5th Edition (EPA-821-R-02-012). The approved test species specified in the MRP are rainbow trout (*Oncorhynchus mykiss*) and fathead minnow (*Pimephales promelas*).

Based on Basin Plan section 3.3.20, if the Discharger can demonstrate that ammonia causes acute toxicity in excess of the acute toxicity limitations in this Order, and that the ammonia in the discharge complies with the ammonia effluent limitations in this Order, then such toxicity does not constitute a violation of the effluent limitations for whole effluent acute toxicity.

6. Whole Effluent Chronic Toxicity

a. Water Quality Objective. Basin Plan section 3.3.18 states, "There shall be no chronic toxicity in ambient waters. Chronic toxicity is a detrimental biological effect on growth rate, reproduction, fertilization success, larval development, population abundance, community composition, or any other relevant measure of the health of an organism, population, or community."

b. Reasonable Potential Analysis. The Discharger conducted semiannual chronic toxicity tests during the previous order term using the echinoderm larval development test. The previous order contained chronic toxicity triggers (three-sample median of 10 TUc or single-sample maximum of 20 TUc) for accelerated chronic toxicity testing. The maximum single-sample chronic toxicity result during the previous order term was 10 TUc in July 2009. The relatively low toxicity indicates low reasonable potential for

chronic toxicity so this Order contains only a narrative chronic toxicity limit. A numeric limit is unwarranted.

c. **Requirements.** The Order contains a narrative chronic toxicity effluent limitation based on the Basin Plan's narrative toxicity water quality objective. The Order also includes requirements for chronic toxicity monitoring to ensure attainment of the narrative toxicity objective and a monitoring "trigger" for initiation of accelerated monitoring requirements when exceeded. The Discharger is required to implement a chronic toxicity reduction evaluation in some circumstances. These requirements are consistent with CTR and SIP requirements.

d. **Screening Phase Study and Monitoring Requirement**. The MRP requires the Discharger to conduct a chronic toxicity screening phase study, as described in MRP Appendix E-1, prior to permit reissuance. The Discharger's April 2012 chronic toxicity screening study did not indicate the presence of toxicity effects in the effluent for the test species examined. Therefore, the Discharger will continue to using the echinoderm larval development test (i.e., purple sea urchin [*Strongylocentroltus purpuratus*] or sand dollar [*Dendraster excentricus*]. The accelerated monitoring triggers are based on Basin Plan Table 4-5.

D. Effluent Limitation Considerations

1. **Anti-backsliding.** This Order complies with the anti-backsliding provisions of CWA sections 402(o) and 303(d)(4) and 40 C.F.R. section 122.44(l), which generally require effluent limitations in a reissued permit to be as stringent as those in the previous permit. Most requirements of this Order are at least as stringent as those in the previous order, with some exceptions:

   - This Order does not retain silver, lead, zinc, tetrachloroethylene, tributyltin, and bis(2-ethylhexyl)phthalate limits from the previous order because data no longer indicate that these pollutants have reasonable potential to exceed water quality objectives. This is consistent with State Water Board Order WQ 2001-16.

   - This Order replaces the previous order's wet weather enterococcus and fecal coliform limits with a new wet weather enterococcus limit. The change from an instantaneous maximum enterococcus limit to a geometric mean is not subject to anti-backsliding requirements because the two limits reflect different averaging periods, both are consistent with Basin Plan Table 3-1 water quality objectives, and a direct comparison between the two types of limits is impossible. Likewise, the change from fecal coliform limits to an enterococcus limit is not subject to anti-backsliding requirements because a direct comparison between these two types of limits is also impossible.

   - This Order does not retain mercury limits from the previous order because NPDES Permit No. CA0038849 now covers mercury discharges.

2. **Antidegradation.** This Order complies with the antidegradation provisions of 40 C.F.R. section 131.12 and State Water Board Resolution No. 68-16. It continues the status quo with respect to the level of discharge authorized in the previous order, which is the baseline by

which to measure whether degradation will occur. This Order does not allow for a reduced level of treatment relative to the previous order.

This Order corrects a typographical error in the previous order. Discharge Prohibition III.E allows the average dry weather flow to increase from 84.5 MGD to 85.4 MGD. Earlier orders (e.g., Order No. R2-2002-0073) allowed this slightly higher flow. This change will not affect water quality, particularly since the effluent limitations and other provisions of this Order require the Discharger to maintain its existing treatment performance. Therefore, discharges subject to this Order will not degrade water quality, and findings authorizing degradation are unnecessary.

This Order replaces the previous order's wet weather enterococcus and fecal coliform limits with a new wet weather enterococcus limit. This change will not degrade receiving water quality because the old and new limits are all consistent with Basin Plan Table 3-1 water quality objectives, and any difference in effects would be temporally limited and would not result in any long-term deleterious effect on water quality (e.g., they would cease after wet weather is over).

3. **Stringency of Requirements for Individual Pollutants.** This Order contains both technology-based and water quality-based effluent limitations for individual pollutants. This Order's technology-based requirements implement minimum, applicable federal technology-based requirements. In addition, this Order contains more stringent effluent limitations as necessary to meet water quality standards. Collectively, this Order's restrictions on individual pollutants are no more stringent than required to implement CWA requirements.

   This Order's WQBELs have been derived to implement water quality objectives that protect beneficial uses. The beneficial uses and water quality objectives have been approved pursuant to federal law and are the applicable federal water quality standards. To the extent that WQBELs were derived from the CTR, the CTR is the applicable standard pursuant to 40 C.F.R. section 131.38. The procedures for calculating these WQBELs are based on the CTR, as implemented in accordance with the SIP, which U.S. EPA approved on May 18, 2000. U.S. EPA approved most Basin Plan beneficial uses and water quality objectives prior to May 30, 2000. Beneficial uses and water quality objectives submitted to U.S. EPA prior to May 30, 2000, but not approved by U.S. EPA before that date, are nonetheless "applicable water quality standards for purposes of the CWA" pursuant to 40 C.F.R. section 131.21(c)(1). U.S. EPA approved the remaining beneficial uses and water quality objectives so they are applicable water quality standards pursuant to 40 C.F.R. section 131.21(c)(2).

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

The receiving water limitations in sections V.A.1 and V.A.2 of the Order are based on Basin Plan narrative and numeric water quality objectives. The receiving water limitation in section V.A.3 of the Order requires compliance with federal and State water quality standards in accordance with the CWA and regulations adopted thereunder.

VI. RATIONALE FOR PROVISIONS

A. Standard Provisions

Attachment D contains standard provisions that apply to all NPDES permits in accordance with 40 C.F.R. section 122.41 and additional conditions applicable to specific categories of permits in accordance with 40 C.F.R. section 122.42. The Discharger must comply with these provisions. The conditions set forth in 40 C.F.R. sections 122.41(a)(1) and (b) through (n) apply to all state-issued NPDES permits and must be incorporated into the permits either expressly or by reference.

In accordance with 40 C.F.R. section 123.25(a)(12), states may omit or modify conditions to impose more stringent requirements. Attachment G contains standard provisions that supplement the federal standard provisions in Attachment D.

This Order omits federal conditions that address enforcement authority specified in 40 C.F.R. sections 122.41(j)(5) and (k)(2) because the State's enforcement authority under the Water Code is more stringent. In lieu of these conditions, this Order incorporates Water Code section 13387(e) by reference.

B. Monitoring and Reporting

Pursuant to 40 C.F.R. section 122.48, NPDES permits must specify requirements for recording and reporting monitoring results. Water Code sections 13267 and 13383, and 40 C.F.R. sections 122.41(h) and (j), authorize the Regional Water Board to require technical and monitoring reports. This Order establishes monitoring and reporting requirements, contained in the Monitoring and Reporting Program (Attachment E), that implement federal and State requirements. For more background regarding these requirements, see section VII of this Fact Sheet.

C. Special Provisions

1. Reopener Provisions

These provisions are based on 40 C.F.R. sections 122.62 and 122.63 and allow modification of this Order and its effluent limitations as necessary in response to updated water quality objectives, regulations, or other new and relevant information that may become available in the future, and other circumstances as allowed by law.

2. Effluent Characterization Study and Report

This Order does not include effluent limitations for priority pollutants that do not demonstrate reasonable potential, but this provision requires the Discharger to continue monitoring for these pollutants during dry weather as described in the MRP and Attachment G. Dry weather monitoring data are necessary to verify that the "no" and "cannot determine" reasonable potential analysis conclusions of this Order remain valid. This requirement is authorized pursuant to CWC section 13267, and is necessary to inform the

next permit reissuance and to ensure that the Discharger takes timely action in response to any unanticipated change in effluent quality during the term of this Order.

3. Pollutant Minimization Program

This provision is based on Basin Plan section 4.13.2 and SIP section 2.4.5.

4. Special Provisions for Municipal Facilities

a. Pretreatment Program. This provision is based on 40 C.F.R. part 403. The Discharger implements a pretreatment program due to the nature and volume of industrial influent to the Southeast Plant. Two significant industrial users discharge to the Facility and are subject to the Discharger's pretreatment program. This provision lists the Discharger's responsibilities regarding its pretreatment program and requires compliance with the provisions in Attachment H, "Pretreatment Requirements."

b. Sludge and Biosolids Management. "Sludge" refers to the solid, semisolid, and liquid residue removed during primary, secondary, and advanced wastewater treatment processes. "Biosolids" refers to sludge that has been treated and may be beneficially used. This provision is based on Basin Plan section 4.17 and 40 C.F.R. parts 257 and 503.

c. Collection System Management. The Discharger's collection system is predominantly a combined sewer system with some limited separate sanitary sewers. It is part of the Facility regulated through this Order. This provision explains this Order's requirements as they relate to the Discharger's collection system and promotes consistency with the State Water Board's *Statewide General Waste Discharge Requirements for Sanitary Sewer Systems* (General Collection System WDRs), Order 2006-0003-DWQ as amended by WQ 2008-0002-EXEC.

i. Separate Sanitary Sewer System. The General Collection System WDRs require public agencies that own or operate sanitary sewer systems with greater than one mile of pipes or sewer lines to enroll for coverage under the General Collection System WDRs. The General Collection System WDRs contain requirements for collection system operation and maintenance and for reporting and mitigating sanitary sewer overflows. They also require agencies to develop sanitary sewer management plans and report all sanitary sewer overflows. The Discharger must comply with both the General Collection System WDRs and this Order. To the extent that the Discharger's separate sanitary sewer collection system is part of the Facility subject to this Order, certain provisions apply, as specified in Provision VI.C.4.c.i.

ii. Combined Sewer System. For purposes of this Order, an "excursion" is a release or diversion of untreated or partially treated wastewater from the combined sewer system that exits the system temporarily and then re-enters it. The Discharger and U.S. EPA developed the collection system excursion reporting requirement in this Order so the information would be available.

5. Combined Sewer Overflow Controls

The *Combined Sewer Overflow Control Policy* addresses combined sewer system operations. Its requirements are summarized below as they relate to this Order. The Discharger has designed, constructed, and implemented control strategies that address wet weather flows. This provision specifies performance criteria for wet weather combined sewer system operations.

a. Combined Sewer Operations and Maintenance Plan. This provision is necessary to ensure that combined sewer system operations and maintenance comply with the Nine Minimum Controls and the Long-Term Control Plan requirements of the *Combined Sewer Overflow Control Policy*.

b. Nine Minimum Controls. The *Combined Sewer Overflow Control Policy* requires these "Nine Minimum Controls" to satisfy CWA technology-based requirements:

- Conduct proper operations and maintenance programs,
- Maximize use of collection system for storage,
- Review and modify pretreatment program,
- Maximize flow to Southeast Plant and North Point Facility,
- Prohibit dry weather combined sewer overflows,
- Control solid and floatable materials in combined sewer discharges,
- Develop and implement pollution prevention program,
- Notify public of combined sewer discharges, and
- Monitor to characterize wet weather discharge impacts and efficacy of controls.

The *Combined Sewer Overflow Control Policy* requires monitoring to ascertain the effectiveness of controls and to verify compliance with water quality standards and protection of beneficial uses. If implemented controls do not result in attainment of water quality standards, including beneficial uses, a discharger must evaluate its operating practices. If monitoring indicates that water quality standards are not met, the data may be used to identify additional controls necessary to achieve water quality standards.

Over the previous order term, the Discharger monitored combined sewer discharges (*Special Study: Overflow Impacts and Efficacy of Combined Sewer Overflow Controls for the San Francisco Bayside System, Southeast Water Pollution Control Plant, North Point Wet Weather Facility and Bayside Wet Weather Facilities*, June 29, 2012). It found that average combined sewer discharge pollutant concentrations are below acute water quality objectives for metals and other priority pollutants, with the exceptions of copper and zinc. The average dissolved zinc concentration was 91 µg/L (based on the default CTR acute translator), compared to the water quality objective of 90 µg/L. The average dissolved copper concentration was 19 µg/L (based on the Basin Plan Table 7.2.1-2 acute translator), compared to the water quality objective of 10.8 µg/L. Water quality objectives apply in the receiving water, not combined sewer discharges *per se*. Therefore, given the relatively short duration of combined sewer discharges (i.e., just a few hours each time), and accounting for the inevitable dilution within the receiving waters during wet weather, water quality standards appear to be maintained.

The Order requires the Discharger to continue monitoring wet weather discharges to characterize their impacts and evaluate the efficacy of its wet weather controls. The Order also requires receiving water monitoring for enterococcus and fecal coliform at recreational use locations to determine the impacts of wet weather discharges on water contact recreation. The data collected may be used to document current conditions and evaluate whether beneficial uses are protected.

Among other requirements, the Nine Minimum Controls require the Discharger to notify the public when combined sewer discharges occur. The Discharger's current notification process fulfills these requirements. It includes posting permanent signs at San Francisco beaches that inform the public in English, Spanish, and Chinese that international "No Swimming" signs will be posted when it is unsafe to enter the water and to warn users that bacteria concentrations may be elevated during heavy rain. The Discharger posts "No Swimming" signs at beaches whenever a combined sewer discharge occurs in the area. These signs remain posted until water sampling indicates that bacteria concentrations have dropped below levels of concern for water contact recreation (i.e., the single-sample bacteriological standards of Cal. Code of Regs. tit. 17, § 7958[a][1]). Both types of signs provide the Discharger's toll-free water quality hotline (1-877-SFBEACH) that the Discharger updates weekly and whenever new bacteria results are available. The Discharger also provides color-coded indicators (green/open; red/posted) of beach water quality conditions on the Internet (http://beaches.sfwater.org).

The Discharger has designated Lewis Harrison as the contact person responsible for the wastewater collection system. The Order allows the Discharger to designate a different contact person as long as the Discharger notifies the Regional Water Board within 90 days.

c. Long-Term Control Plan. The *Combined Sewer Overflow Control Policy* requires implementation of a Long-Term Control Plan to to satisfy CWA water quality-based requirements (see section IV.C.1 of this Fact Sheet). The Discharger designed and built a combined sewer system that provides for long-term control and treatment. This provision specifies how the combined sewer system is to be operated, consistent with implementation of the Long-Term Control Plan. The Discharger designed the system based on historical rainfall to achieve the following long-term average annual goals:

- Four combined sewer discharge events along the North Shore (Discharge Point Nos. 009 through 017);
- Ten combined sewer discharge events within the Central Basin (Discharge Point Nos. 018 through 036); and
- One combined sewer discharge event along the Southeast Sector (Discharge Point Nos. 037 through 043).

Some years are wetter than others and may contribute more or less flow than anticipated by these design goals; therefore, these goals are not intended for determining compliance.

This provision requires the Discharger to synthesize and update its Long-Term Control Plan into one document that reflects current circumstances. The updated plan is necessary to optimize system operations so as to maximize pollutant removal during wet weather

and minimize combined sewer discharges. This requirement recognizes that circumstances have changed since the plan was first developed and implemented. However, the Order maintains the historical long-term average annual design goals for combined sewer discharges.

In addition to the system design elements of the plan, the Discharger is to describe additional measures, to the extent technically and economically feasible, to minimize combined sewer discharges (e.g., implementing and promoting low-impact development measures that enhance stormwater percolation and slow stormwater runoff to the combined sewer system).

The Discharger is also to develop and propose a mechanism to evaluate the performance of its wet weather disinfection system for Discharge Point Nos. 001 through 006. Based on the proposal, the Regional Water Board may consider replacing the wet weather enterococcus limits in this Order when it next takes up this permit for reissuance.

This provision also requires the Discharger to review its approach to protecting sensitive areas, which include waters with threatened or endangered species and their habitat, waters with primary contact recreation, and waters with shellfish beds, among others. This provision implements *Combined Sewer Overflow Control Policy* section II.C.3, "Consideration of Sensitive Areas," which requires the following with each permit reissuance:

i. Prohibit new or significantly increased combined sewer discharges;

ii. Eliminate and relocate combined sewer discharges that discharge to sensitive areas wherever physically possible and economically achievable, except where elimination or relocation would provide less environmental protection than additional treatment (where elimination or relocation is not physically possible and economically achievable, or would provide less environmental protection than additional treatment, treatment for remaining combined sewer discharges must be sufficient to protect beneficial uses); and

iii. Where elimination or relocation is not physically possible and economically achievable, reassess the situation, based on new or improved techniques to eliminate or relocate the combined sewer discharges, or based on changed circumstances that influence economic achievability, with each subsequent permit term.

d. This provision sets forth steps the Discharger must take if the Executive Offer finds that its discharges cause violations of water quality standards in receiving waters.

6. Other Special Provisions

a. Copper Action Plan. This provision is based on Basin Plan section 7.2.1.2 and is necessary to ensure that use of copper site-specific objectives is consistent with antidegradation policies. Data the San Francisco Estuary Institute compiled for 2008-2010 indicate no degradation of San Francisco Bay water quality with respect to copper (http://www.sfei.org/content/copper-site-specific-objective-3-year-rolling-averages).

b. Cyanide Action Plan. This provision is based on Basin Plan section 4.7.2.2 and is necessary to ensure that use of cyanide site-specific objectives is consistent with antidegradation policies. The threshold for considering influent cyanide concentrations to indicate a possible "significant cyanide discharge" in the Discharger's service area is set at 21 µg/L. This concentration is about 1.5 times the maximum cyanide concentration (14 µg/L) found in the facility's influent during the previous order term. Because the Discharger has not observed influent cyanide concentrations greater than 14 µg/L, if influent concentrations 1.5 times this level were observed, there could be a significant cyanide source.

c. Standard Operating Procedures Requirement for Resource Recovery. Standard Operating Procedures are required for dischargers that accept hauled waste fats, oil, and grease for injection into anaerobic digesters. The development and implementations of Standard Operating Procedures for management of these materials is intended to allow the California Deparment of Resources Recycling and Recovery to exempt operations from separate and redundant permitting programs. If the Discharger does not accept fats, oil, and grease for resource recovery purposes, it is not required to develop and implement Standard Operating Procedures.

VII. RATIONALE FOR MONITORING AND REPORTING PROGRAM (MRP)

Attachment E contains the MRP for this Order. It specifies sampling stations, pollutants to be monitored (including all parameters for which effluent limitations are specified), monitoring frequencies, and reporting requirements. The following provides the rationale for the MRP requirements.

A. MRP Requirements Rationale

1. **Influent Monitoring.** Influent flow monitoring is necessary to identify wet weather as defined in Attachment A and to evaluate implementation of Long-Term Control Plan requirements. BOD_5 and TSS monitoring is necessary to evaluate compliance with this Order's 85 percent removal requirement. Basin Plan section 4.7.2.2 requires cyanide monitoring because this Order is based on site-specific cyanide water quality objectives.

2. **Effluent Monitoring.** Effluent flow monitoring is necessary to evaluate compliance with Prohibition III.E (average dry weather flow) and to understand Facility operations. During dry weather, monitoring for the other parameters in Table E-3 is necessary to evaluate compliance with this Order's effluent limitations applicable to Discharge Point No. 001. During wet weather, enterococcus and total residual chlorine monitoring is necessary to evaluate compliance with this Order's effluent limitations applicable to Discharge Point Nos. 001 through 006. Fecal coliform monitoring will provide additional information regarding the efficacy of controls. During combined sewer discharge events, duration and flow volume monitoring is necessary to characterize combined sewer discharges. Provision VI.C.2 of the Order requires monitoring for additional priority pollutants for which there are no effluent limits to inform the next permit reissuance and to ensure that the Discharger takes timely steps in response to any unanticipated change in effluent quality.

Provision VI.C.5.b.ix(a) of the Order requires monitoring to characterize combined sewer discharge impacts and efficacy of controls.

3. **Whole Effluent Toxicity Testing**. Acute and chronic whole effluent toxicity tests are necessary to evaluate compliance with acute and chronic toxicity effluent limitations during dry weather. Chronic toxicity tests during dry weather are also necessary to evaluate whether chronic toxicity triggers the need for a Toxicity Reduction Evaluation. Acute toxicity tests during wet weather are necessary to evaluate the efficacy of wet weather controls.

4. **Receiving Water Monitoring.** The Discharger is required to continue participating in the RMP, which involves collecting data on pollutants and toxicity in San Francisco Bay water, sediment, and biota. This monitoring is necessary to characterize the receiving water and the effects of the discharges authorized in this Order. The Discharger is also required to monitor shoreline locations where water contact recreation takes place. This monitoring is necessary to assess the possible effects of combined sewer discharges and to comply with Provisions VI.C.5.b.viii, "Notify Public of Combined Sewer Discharges," and VI.C.5.b.ix, "Monitor to Characterize Combined Sewer Discharge Impacts and Efficacy of Controls."

5. **Pretreatment and Biosolids Monitoring.** The pretreatment and biosolids monitoring requirements for influent, effluent, and biosolids are necessary to evaluate compliance with the Discharger's U.S. EPA-approved pretreatment program. Biosolids monitoring is also required pursuant to 40 C.F.R. part 503.

B. Monitoring Requirements Summary. The table below summarizes routine monitoring requirements. This table is for informational purposes only. The actual requirements are specified in the MRP and elsewhere in this Order.

Table F-11. Monitoring Requirements Summary

Parameter	Influent INF-001	Effluent EFF-001A	Effluent EFF-001B, EFF-002, and EFF-003	Effluent CSD-010 through CSD-043	Biosolids BIO-001	Receiving Water
Flow	Continuous[1]	Continuous[1]	Continuous[1]	1/Event[1]		
BOD_5	1/Week[2]	1/Week[3]				
TSS	5/Week[2]	5/Week	1/Month	1/Event		
Chemical Oxygen Demand (COD)		5/Week[3]	1/Month			
Oil and Grease		1/Month	1/Month			
pH		Continuous or 5/Week	Continuous or 1/Month	1/Event		Support RMP
Total Residual Chlorine		Continuous or 1/Hour	Continuous or 1/Hour			
Acute Toxicity		1/Month	1/Month[8]			Support RMP
Chronic Toxicity		2/Year				Support RMP
Enterococcus		4/Year[4]	1/Day			1/Day[6]
Fecal Coliform		1/Week	1/Day			1/Day[6]
Dissolved Oxygen						Support RMP
Sulfides						Support RMP
Temperature						Support RMP
Copper, Total Recoverable		1/Month	1/Month			Support RMP
Cyanide, Total	1/Month[2]	1/Month	1/Month	1/Event		Support RMP

Parameter	Influent INF-001	Effluent EFF-001A	Effluent EFF-001B, EFF-002, and EFF-003	Effluent CSD-010 through CSD-043	Biosolids BIO-001	Receiving Water
Ammonia, Total		1/Month	1/Month	1/Event		Support RMP
Dioxin-TEQ		2/Year				Support RMP
1,2-Diphenylhydrazine		1/Month				Support RMP
Settleable Matter				1/Event		
All other priority pollutants		1/Year	1/Year	1/Year[7]		Support RMP
Volatile Organic Compounds	2/Year	2/Year			2/Year	
Base/Neutrals Acid Extractable Organic Compounds	2/Year	2/Year			2/Year	
Metals[2]	1/Month	1/Month		1/Event	2/Year	Support RMP
Hexavalent Chromium	1/Month	1/Month			2/Year	Support RMP
Mercury	1/Month	1/Month			2/Year	Support RMP
Metric tons/year					See Attach. G, § III.B.1	
Paint filter test					See Attach. G, § III.B.2	

Footnotes:

[1] The following flow information is to be reported:

- Daily average flow (MGD)
- Monthly average flow (MGD)
- Total monthly flow volume (MG)
- Maximum and minimum daily average flow rates (MGD)

For Monitoring Locations CSD-010 through CSD-043, only total flow volume (MG) and event duration are to be reported.

[2] The metals are arsenic, cadmium, copper, lead, nickel, selenium, silver, and zinc.

[3] If the COD_5 concentration exceeds 75 mg/L on two consecutive days, the Discharger is to increase the BOD_5 sampling frequency to daily until it demonstreates that the BOD_5 concentration is below 30 mg/L.

[4] If the enterococcus effluent limitation is exceeded, the Discharger is to conduct 5/Month accelerated sampling for at least three consecutive months. If full compliance is demonstrated after the three months, the Discharger may return to the 4/Year sampling.

[5] Influent monitoring is only required during dry weather.

[6] Monitoring is to be once per day following nearby combined sewer discharges. Otherwise, monitoring is to be sufficient to characterize ambient background conditions (e.g., weekly).

[7] Monitoring is only required at Monitoring Location CSD-041.

[8] Monitoring is only required at Monitoring Locations EFF-001B and EFF-003.

VIII. PUBLIC PARTICIPATION

The Regional Water Board considered the issuance of WDRs that will serve as an NPDES permit for the Facility. As a step in the WDR adoption process, Regional Water Board staff developed tentative WDRs and encouraged public participation in the WDR adoption process.

A. Notification of Interested Parties. The Regional Water Board notified the Discharger and interested agencies and persons of its intent to prescribe WDRs for the discharge and provided an opportunity to submit written comments and recommendations. Notification was provided through *The Recorder*. The public had access to the agenda and any changes in dates and locations through the Regional Water Board's website at http://www.waterboards.ca.gov/sanfranciscobay.

B. Written Comments. Interested persons were invited to submit written comments concerning the tentative WDRs as explained through the notification process. Comments were due either in person or by mail at the Regional Water Board office at 1515 Clay Street, Suite 1400, Oakland, California 94612, to the attention of Derek Whitworth.

For full staff response and Regional Water Board consideration, the written comments were due at the Regional Water Board office by 5:00 p.m. on July 1, 2013.

C. Public Hearing. The Regional Water Board held a public hearing on the tentative WDRs during its regular meeting at the following date and time, and at the following location:

Date: Wednesday, August 14, 2013
Time: 9:00 a.m.
Location: Elihu Harris State Office Building
1515 Clay Street, 1st Floor Auditorium
Oakland, CA 94612

Contact: Derek Whitworth, (510) 622-2349, DWhitworth@waterboards.ca.gov

Interested persons were invited to attend. At the public hearing, the Regional Water Board heard testimony pertinent to the discharge, WDRs, and permit. For accuracy of the record, important testimony wasrequested to be in writing.

Dates and venues change. The Regional Water Board web address is http://www.waterboards.ca.gov/sanfranciscobay, where one could access the current agenda for changes in dates and locations.

D. Reconsideration of Waste Discharge Requirements. Any aggrieved person may petition the State Water Board to review the Regional Water Board decision regarding the final WDRs. The State Water Board must receive the petition at the following address within 30 calendar days of the Regional Water Board action:

State Water Resources Control Board
Office of Chief Counsel
P.O. Box 100, 1001 I Street
Sacramento, CA 95812-0100

For instructions on how to file a petition for review, see http://www.waterboards.ca.gov/public_notices/petitions/water_quality/wqpetition_instr.shtml.

E. Information and Copying. The Report of Waste Discharge, related supporting documents, and comments received are on file and may be inspected at the address above at any time between 9:00 a.m. and 5:00 p.m., Monday through Friday. Copying of documents may be arranged by calling (510) 622-2300.

F. Register of Interested Persons. Any person interested in being placed on the mailing list for information regarding the WDRs and NPDES permit should contact the Regional Water Board, reference the Facility, and provide a name, address, and phone number.

G. Additional Information. Requests for additional information or questions regarding this Order should be directed to Derek Whitworth at (510) 622-2349 or DWhitworth@waterboards.ca.gov.

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ATTACHMENT G

REGIONAL STANDARD PROVISIONS, AND MONITORING
AND REPORTING REQUIREMENTS
(SUPPLEMENT TO ATTACHMENT D)

For

NPDES WASTEWATER DISCHARGE PERMITS

March 2010

Contents

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

REGIONAL STANDARD PROVISIONS, AND MONITORING AND REPORTING REQUIREMENTS (SUPPLEMENT TO ATTACHMENT D)

FOR

NPDES WASTEWATER DISCHARGE PERMITS

APPLICABILITY

This document applies to dischargers covered by a National Pollutant Discharge Elimination System (NPDES) permit. This document does not apply to Municipal Separate Storm Sewer System (MS4) NPDES permits.

The purpose of this document is to supplement the requirements of Attachment D, Standard Provisions. The requirements in this supplemental document are designed to ensure permit compliance through preventative planning, monitoring, recordkeeping, and reporting. In addition, this document requires proper characterization of issues as they arise, and timely and full responses to problems encountered. To provide clarity on which sections of Attachment D this document supplements, this document is arranged in the same format as Attachment D.

I. STANDARD PROVISIONS - PERMIT COMPLIANCE

A. Duty to Comply – Not Supplemented

B. Need to Halt or Reduce Activity Not a Defense – Not Supplemented

C. Duty to Mitigate – This supplements I.C. of Standard Provisions (Attachment D)

1. Contingency Plan - The Discharger shall maintain a Contingency Plan as originally required by Regional Water Board Resolution 74-10 and as prudent in accordance with current municipal facility emergency planning. The Contingency Plan shall describe procedures to ensure that existing facilities remain in, or are rapidly returned to, operation in the event of a process failure or emergency incident, such as employee strike, strike by suppliers of chemicals or maintenance services, power outage, vandalism, earthquake, or fire. The Discharger may combine the Contingency Plan and Spill Prevention Plan into one document. Discharge in violation of the permit where the Discharger has failed to develop and implement a Contingency Plan as described below will be the basis for considering the discharge a willful and negligent violation of the permit pursuant to California Water Code Section 13387. The Contingency Plan shall, at a minimum, contain the provisions of a. through g. below.

a. Provision of personnel for continued operation and maintenance of sewerage facilities during employee strikes or strikes against contractors providing services.

b. Maintenance of adequate chemicals or other supplies and spare parts necessary for continued operations of sewerage facilities.

c. Provisions of emergency standby power.

d. Protection against vandalism.

e. Expeditious action to repair failures of, or damage to, equipment and sewer lines.

f. Report of spills and discharges of untreated or inadequately treated wastes, including measures taken to clean up the effects of such discharges.

g. Programs for maintenance, replacement, and surveillance of physical condition of equipment, facilities, and sewer lines.

2. Spill Prevention Plan - The Discharger shall maintain a Spill Prevention Plan to prevent accidental discharges and minimize the effects of such events. The Spill Prevention Plan shall:

a. Identify the possible sources of accidental discharge, untreated or partially treated waste bypass, and polluted drainage;

b. Evaluate the effectiveness of present facilities and procedures, and state when they became operational; and

c. Predict the effectiveness of the proposed facilities and procedures, and provide an implementation schedule containing interim and final dates when they will be constructed, implemented, or operational.

This Regional Water Board, after review of the Contingency and Spill Prevention Plans or their updated revisions, may establish conditions it deems necessary to control accidental discharges and to minimize the effects of such events. Such conditions may be incorporated as part of the permit upon notice to the Discharger.

D. Proper Operation & Maintenance – This supplements I.D of Standard Provisions (Attachment D)

1. Operation and Maintenance (O&M) Manual - The Discharger shall maintain an O&M Manual to provide the plant and regulatory personnel with a source of information describing all equipment, recommended operational strategies, process control monitoring, and maintenance activities. To remain a useful and relevant document, the O&M Manual shall be kept updated to reflect significant changes in treatment facility equipment and operational practices. The O&M Manual shall be maintained in usable condition and be available for reference and use by all relevant personnel and Regional Water Board staff.

2. Wastewater Facilities Status Report - The Discharger shall regularly review, revise, or update, as necessary, its Wastewater Facilities Status Report. This report shall document how the Discharger operates and maintains its wastewater collection, treatment, and disposal facilities to ensure that all facilities are adequately staffed, supervised, financed, operated, maintained, repaired, and upgraded as necessary to provide adequate and reliable transport, treatment, and disposal of all wastewater from both existing and planned future wastewater sources under the Discharger's service responsibilities.

3. Proper Supervision and Operation of Publicly Owned Treatment Works (POTWs) - POTWs shall be supervised and operated by persons possessing certificates of appropriate grade pursuant to Division 4, Chapter 14, Title 23 of the California Code of Regulations.

E. Property Rights – Not Supplemented

F. Inspection and Entry – Not Supplemented

G. Bypass – Not Supplemented

H. Upset – Not Supplemented

I. Other – This section is an addition to Standard Provisions (Attachment D)

1. Neither the treatment nor the discharge of pollutants shall create pollution, contamination, or nuisance as defined by California Water Code Section 13050.

2. Collection, treatment, storage, and disposal systems shall be operated in a manner that precludes public contact with wastewater, except in cases where excluding the public is infeasible, such as private property. If public contact with wastewater could reasonably occur on public property, warning signs shall be posted.

3. If the Discharger submits a timely and complete Report of Waste Discharge for permit reissuance, this permit continues in force and effect until a new permit is issued or the Regional Water Board rescinds the permit.

J. Storm Water – This section is an addition to Standard Provisions (Attachment D)

These provisions apply to facilities that do not direct all storm water flows from the facility to the wastewater treatment plant headworks.

1. Storm Water Pollution Prevention Plan (SWPP Plan)

The SWPP Plan shall be designed in accordance with good engineering practices and shall address the following objectives:

a. To identify pollutant sources that may affect the quality of storm water discharges; and

b. To identify, assign, and implement control measures and management practices to reduce pollutants in storm water discharges.

The SWPP Plan may be combined with the existing Spill Prevention Plan as required in accordance with Section C.2. The SWPP Plan shall be retained on-site and made available upon request of a representative of the Regional Water Board.

2. Source Identification

The SWPP Plan shall provide a description of potential sources that may be expected to add significant quantities of pollutants to storm water discharges, or may result in non-storm water discharges from the facility. The SWPP Plan shall include, at a minimum, the following items:

a. A topographical map (or other acceptable map if a topographical map is unavailable), extending one-quarter mile beyond the property boundaries of the facility, showing the wastewater treatment facility process areas, surface water bodies (including springs and wells), and discharge point(s) where the facility's storm water discharges to a municipal storm drain system or other points of discharge to waters of the State. The requirements of this paragraph may be included in the site map required under the following paragraph if appropriate.

b. A site map showing the following:

   1) Storm water conveyance, drainage, and discharge structures;

   2) An outline of the storm water drainage areas for each storm water discharge point;

   3) Paved areas and buildings;

   4) Areas of actual or potential pollutant contact with storm water or release to storm water, including but not limited to outdoor storage and process areas; material loading, unloading, and access areas; and waste treatment, storage, and disposal areas;

   5) Location of existing storm water structural control measures (i.e., berms, coverings, etc.);

   6) Surface water locations, including springs and wetlands; and

   7) Vehicle service areas.

c. A narrative description of the following:

   1) Wastewater treatment process activity areas;

   2) Materials, equipment, and vehicle management practices employed to minimize contact of significant materials of concern with storm water discharges;

   3) Material storage, loading, unloading, and access areas;

   4) Existing structural and non-structural control measures (if any) to reduce pollutants in storm water discharges; and

   5) Methods of on-site storage and disposal of significant materials.

d. A list of pollutants that have a reasonable potential to be present in storm water discharges in significant quantities.

3. Storm Water Management Controls

The SWPP Plan shall describe the storm water management controls appropriate for the facility and a time schedule for fully implementing such controls. The appropriateness and priorities of controls in the SWPP Plan shall reflect identified potential sources of pollutants. The description of storm water management controls to be implemented shall include, as appropriate:

a. Storm water pollution prevention personnel

Identify specific individuals (and job titles) that are responsible for developing, implementing, and reviewing the SWPP Plan.

b. Good housekeeping

Good housekeeping requires the maintenance of clean, orderly facility areas that discharge storm water. Material handling areas shall be inspected and cleaned to reduce the potential for pollutants to enter the storm drain conveyance system.

c. Spill prevention and response

Identify areas where significant materials can spill into or otherwise enter storm water conveyance systems and their accompanying drainage points. Specific material handling procedures, storage requirements, and cleanup equipment and procedures shall be identified, as appropriate. The necessary equipment to implement a cleanup shall be available, and personnel shall be trained in proper response, containment, and cleanup of spills. Internal reporting procedures for spills of significant materials shall be established.

d. Source control

Source controls include, for example, elimination or reduction of the use of toxic pollutants, covering of pollutant source areas, sweeping of paved areas, containment of potential pollutants, labeling of all storm drain inlets with “No Dumping” signs, isolation or separation of industrial and non-industrial pollutant sources so that runoff from these areas does not mix, etc.

e. Storm water management practices

Storm water management practices are practices other than those that control the sources of pollutants. Such practices include treatment or conveyance structures, such as drop inlets, channels, retention and detention basins, treatment vaults, infiltration galleries, filters, oil/water separators, etc. Based on assessment of the potential of various sources to contribute pollutants to storm water discharges in significant quantities, additional storm water management practices to remove pollutants from storm water discharges shall be implemented and design criteria shall be described.

f. Sediment and erosion control

Measures to minimize erosion around the storm water drainage and discharge points, such as riprap, revegetation, slope stabilization, etc., shall be described.

g. Employee training

Employee training programs shall inform all personnel responsible for implementing the SWPP Plan. Training shall address spill response, good housekeeping, and material management practices. New employee and refresher training schedules shall be identified.

h. Inspections

All inspections shall be done by trained personnel. Material handling areas shall be inspected for evidence of, or the potential for, pollutants entering storm water discharges. A tracking or follow up procedure shall be used to ensure appropriate response has been taken in response to an inspection. Inspections and maintenance activities shall be documented and recorded. Inspection records shall be retained for five years.

i. Records

A tracking and follow-up procedure shall be described to ensure that adequate response and corrective actions have been taken in response to inspections.

4. Annual Verification of SWPP Plan

An annual facility inspection shall be conducted to verify that all elements of the SWPP Plan are accurate and up-to-date. The results of this review shall be reported in the Annual Report to the Regional Water Board described in Section V.C.f.

K. Biosolids Management – This section is an addition to Standard Provisions (Attachment D)

Biosolids must meet the following requirements prior to land application. The Discharger must either demonstrate compliance or, if it sends the biosolids to another party for further treatment or distribution, must give the recipient the information necessary to ensure compliance.

1. Exceptional quality biosolids meet the pollutant concentration limits in Table III of 40 CFR Part 503.13, Class A pathogen limits, and one of the vector attraction reduction requirements in 503.33(b)(1)-(b)(8). Such biosolids do not have to be tracked further for compliance with general requirements (503.12) and management practices (503.14).

2. Biosolids used for agricultural land, forest, or reclamation shall meet the pollutant limits in Table I (ceiling concentrations) and Table II or Table III (cumulative loadings or pollutant concentration limits) of 503.13. They shall also meet the general requirements (503.12) and management practices (503.14) (if not exceptional quality biosolids) for Class A or Class B pathogen levels with associated access restrictions (503.32) and one of the 10 vector attraction reduction requirements in 503.33(b)(1)-(b)(10).

3. Biosolids used for lawn or home gardens must meet exceptional quality biosolids limits.

4. Biosolids sold or given away in a bag or other container must meet the pollutant limits in either Table III or Table IV (pollutant concentration limits or annual pollutant loading rate limits) of 503.13. If Table IV is used, a label or information sheet must be attached to the biosolids packing that explains Table IV (see 503.14). The biosolids must also meet the Class A pathogen limits and one of the vector attraction reduction requirements in 503.33(b)(1)-(b)(8).

II. STANDARD PROVISIONS – PERMIT ACTION – Not Supplemented

III. STANDARD PROVISIONS – MONITORING

A. Sampling and Analyses – This section is a supplement to III.A and III.B of Standard Provisions (Attachment D)

1. Use of Certified Laboratories

Water and waste analyses shall be performed by a laboratory certified for these analyses in accordance with California Water Code Section 13176.

2. Use of Appropriate Minimum Levels

Table C lists the suggested analytical methods for the 126 priority pollutants and other toxic pollutants that should be used, unless a particular method or minimum level (ML) is required in the MRP.

For priority pollutant monitoring, when there is more than one ML value for a given substance, the Discharger may select any one of the analytical methods cited in Table C for compliance determination, or any other method described in 40 CFR part 136 or approved by U.S. EPA (such as the 1600 series) if authorized by the Regional Water Board. However, the ML must be below the effluent limitation and water quality objective. If no ML value is below the effluent limitation and water quality objective, then the method must achieve an ML no greater than the lowest ML value indicated in Table C. All monitoring instruments and equipment shall be properly calibrated and maintained to ensure accuracy of measurements.

3. Frequency of Monitoring

The minimum schedule of sampling analysis is specified in the MRP portion of the permit.

a. Timing of Sample Collection

1) The Discharger shall collect samples of influent on varying days selected at random and shall not include any plant recirculation or other sidestream wastes, unless otherwise stipulated by the MRP.

2) The Discharger shall collect samples of effluent on days coincident with influent sampling unless otherwise stipulated by the MRP or the Executive Officer. The Executive Officer may approve an alternative sampling plan if it is demonstrated to be representative of plant discharge flow and in compliance with all other permit requirements.

3) The Discharger shall collect grab samples of effluent during periods of day-time maximum peak effluent flows (or peak flows through secondary treatment units for facilities that recycle effluent flows).

4) Effluent sampling for conventional pollutants shall occur on at least one day of any multiple-day bioassay test the MRP requires. During the course of the test, on at least one day, the Discharger shall collect and retain samples of the discharge. In the event a bioassay test does

not comply with permit limits, the Discharger shall analyze these retained samples for pollutants that could be toxic to aquatic life and for which it has effluent limits.

i. The Discharger shall perform bioassay tests on final effluent samples; when chlorine is used for disinfection, bioassay tests shall be performed on effluent after chlorination-dechlorination; and

ii. The Discharger shall analyze for total ammonia nitrogen and calculate the amount of un-ionized ammonia whenever test results fail to meet the percent survival specified in the permit.

b. Conditions Triggering Accelerated Monitoring

1) If the results from two consecutive samples of a constituent monitored in a 30-day period exceed the monthly average limit for any parameter (or if the required sampling frequency is once per month and the monthly sample exceeds the monthly average limit), the Discharger shall, within 24 hours after the results are received, increase its sampling frequency to daily until the results from the additional sampling show that the parameter is in compliance with the monthly average limit.

2) If any maximum daily limit is exceeded, the Discharger shall increase its sampling frequency to daily within 24 hours after the results are received that indicate the exceedance of the maximum daily limit until two samples collected on consecutive days show compliance with the maximum daily limit.

3) If final or intermediate results of an acute bioassay test indicate a violation or threatened violation (e.g., the percentage of surviving test organisms of any single acute bioassay test is less than 70 percent), the Discharger shall initiate a new test as soon as practical, and the Discharger shall investigate the cause of the mortalities and report its findings in the next self monitoring report (SMR).

4) The Discharger shall calibrate chlorine residual analyzers against grab samples as frequently as necessary to maintain accurate control and reliable operation. If an effluent violation is detected, the Discharger shall collect grab samples at least every 30 minutes until compliance with the limit is achieved, unless the Discharger monitors chlorine residual continuously. In such cases, the Discharger shall continue to conduct continuous monitoring as required by its permit.

5) When a bypass occurs (except one subject to provision III.A.3.b.6 below), the Discharger shall monitor flows and collect samples on a daily basis for all constituents at affected discharge points that have effluent limits for the duration of the bypass (including acute toxicity using static renewals), except chronic toxicity, unless otherwise stipulated by the MRP.

6) Unless otherwise stipulated by the MRP, when a bypass approved pursuant to Attachment D, Standard Provisions, Sections I.G.2 or I.G.4, occurs, the Discharger shall monitor flows and, using appropriate procedures as specified in the MRP, collect and retain samples for affected discharge points on a daily basis for the duration of the bypass. The Discharger shall analyze for total suspended solids (TSS) using 24-hour composites (or more frequent increments) and for bacteria indicators with effluent limits using grab samples. If TSS exceeds 45 mg/L in any composite sample, the Discharger shall also analyze the retained samples for that discharge

for all other constituents that have effluent limits, except oil and grease, mercury, dioxin-TEQ, and acute and chronic toxicity. Additionally, at least once each year, the Discharger shall analyze the retained samples for one approved bypass discharge event for all other constituents that have effluent limits, except oil and grease, mercury, dioxin-TEQ, and acute and chronic toxicity. This monitoring shall be in addition to the minimum monitoring specified in the MRP.

c. Storm Water Monitoring

The requirements of this section only apply to facilities that are not covered by an NPDES permit for storm water discharges and where not all site storm drainage from process areas (i.e., areas of the treatment facility where chemicals or wastewater could come in contact with storm water) is directed to the headworks. For storm water not directed to the headworks during the wet season (October 1 to April 30), the Discharger shall:

1) Conduct visual observations of the storm water discharge locations during daylight hours at least once per month during a storm event that produces significant storm water discharge to observe the presence of floating and suspended materials, oil and grease, discoloration, turbidity, and odor, etc.

2) Measure (or estimate) the total volume of storm water discharge, collect grab samples of storm water discharge from at least two storm events that produce significant storm water discharge, and analyze the samples for oil and grease, pH, TSS, and specific conductance.

   The grab samples shall be taken during the first 30 minutes of the discharge. If collection of the grab samples during the first 30 minutes is impracticable, grab samples may be taken during the first hour of the discharge, and the Discharger shall explain in the Annual Report why the grab sample(s) could not be taken in the first 30 minutes.

3) Testing for the presence of non-storm water discharges shall be conducted no less than twice during the dry season (May 1 to September 30) at all storm water discharge locations. Tests may include visual observations of flows, stains, sludges, odors, and other abnormal conditions; dye tests; TV line surveys; or analysis and validation of accurate piping schematics. Records shall be maintained describing the method used, date of testing, locations observed, and test results.

4) Samples shall be collected from all locations where storm water is discharged. Samples shall represent the quality and quantity of storm water discharged from the facility. If a facility discharges storm water at multiple locations, the Discharger may sample a reduced number of locations if it establishes and documents through the monitoring program that storm water discharges from different locations are substantially identical.

5) Records of all storm water monitoring information and copies of all reports required by the permit shall be retained for a period of at least three years from the date of sample, observation, or report.

d. Receiving Water Monitoring

The requirements of this section only apply when the MRP requires receiving water sampling.

1) Receiving water samples shall be collected on days coincident with effluent sampling for conventional pollutants.

2) Receiving water samples shall be collected at each station on each sampling day during the period within one hour following low slack water. Where sampling during lower slack water is impractical, sampling shall be performed during higher slack water. Samples shall be collected within the discharge plume and down current of the discharge point so as to be representative, unless otherwise stipulated in the MRP.

3) Samples shall be collected within one foot of the surface of the receiving water, unless otherwise stipulated in the MRP.

B. Biosolids Monitoring – This section supplements III.B of Standard Provisions (Attachment D)

When biosolids are sent to a landfill, sent to a surface disposal site, or applied to land as a soil amendment, they must be monitored as follows:

1. Biosolids Monitoring Frequency

Biosolids disposal must be monitored at the following frequency:

Metric tons biosolids/365 days	Frequency
0-290	Once per year
290-1500	Quarterly
1500-15,000	Six times per year
Over 15,000	Once per month

(Metric tons are on a dry weight basis)

2. Biosolids Pollutants to Monitor

Biosolids shall be monitored for the following constituents:

- Land Application: Arsenic, cadmium, copper, mercury, molybdenum, nickel, lead, selenium, and zinc
- Municipal Landfill: Paint filter test (pursuant to 40 CFR 258)
- Biosolids-only Landfill or Surface Disposal Site (if no liner and leachate system): arsenic, chromium, and nickel

C. Standard Observations – This section is an addition to III of Standard Provisions (AttachmentD)

1. Receiving Water Observations

The requirements of this section only apply when the MRP requires standard observations of the receiving water. Standard observations shall include the following:

a. *Floating and suspended materials* (e.g., oil, grease, algae, and other macroscopic particulate matter): presence or absence, source, and size of affected area.

b. *Discoloration and turbidity*: description of color, source, and size of affected area.

c. *Odor*: presence or absence, characterization, source, distance of travel, and wind direction.

d. *Beneficial water use*: presence of water-associated waterfowl or wildlife, fisherpeople, and other recreational activities in the vicinity of each sampling station.

e. *Hydrographic condition*: time and height of corrected high and low tides (corrected to nearest National Oceanic and Atmospheric Administration location for the sampling date and time of sample collection).

f. *Weather conditions*:

1) Air temperature; and

2) Total precipitation during the five days prior to observation.

2. Wastewater Effluent Observations

The requirements of this section only apply when the MRP requires wastewater effluent standard observations. Standard observations shall include the following:

a. *Floating and suspended material of wastewater origin* (e.g., oil, grease, algae, and other macroscopic particulate matter): presence or absence.

b. *Odor*: presence or absence, characterization, source, distance of travel, and wind direction.

3. Beach and Shoreline Observations

The requirements of this section only apply when the MRP requires beach and shoreline standard observations. Standard observations shall include the following:

a. *Material of wastewater origin*: presence or absence, description of material, estimated size of affected area, and source.

b. *Beneficial use*: estimate number of people participating in recreational water contact, non-water contact, or fishing activities.

4. Land Retention or Disposal Area Observations

The requirements of this section only apply to facilities with on-site surface impoundments or disposal areas that are in use. This section applies to both liquid and solid wastes, whether confined or unconfined. The Discharger shall conduct the following for each impoundment:

a. Determine the amount of freeboard at the lowest point of dikes confining liquid wastes.

b. Report evidence of leaching liquid from area of confinement and estimated size of affected area. Show affected area on a sketch and volume of flow (e.g., gallons per minute [gpm]).

c. Regarding odor, describe presence or absence, characterization, source, distance of travel, and wind direction.

d. Estimate number of waterfowl and other water-associated birds in the disposal area and vicinity.

5. Periphery of Waste Treatment and/or Disposal Facilities Observations

The requirements of this section only apply when the MRP specifies periphery standard observations. Standard observations shall include the following:

a. *Odor*: presence or absence, characterization, source, and distance of travel.

b. *Weather conditions*: wind direction and estimated velocity.

IV. STANDARD PROVISIONS – RECORDS

A. Records to be Maintained – This supplements IV.A of Standard Provisions (Attachment D)

The Discharger shall maintain records in a manner and at a location (e.g., wastewater treatment plant or Discharger offices) such that the records are accessible to Regional Water Board staff. The minimum period of retention specified in Section IV, Records, of the Federal Standard Provisions shall be extended during the course of any unresolved litigation regarding the subject discharge, or when requested by the Regional Water Board or Regional Administrator of U.S. EPA, Region IX.

A copy of the permit shall be maintained at the discharge facility and be available at all times to operating personnel.

B. Records of monitoring information shall include – This supplements IV.B of Standard Provision (Attachment D)

1. Analytical Information

Records shall include analytical method detection limits, minimum levels, reporting levels, and related quantification parameters.

2. Flow Monitoring Data

For all required flow monitoring (e.g., influent and effluent flows), the additional records shall include the following, unless otherwise stipulated by the MRP:

a. Total volume for each day; and

b. Maximum, minimum, and average daily flows for each calendar month.

3. Wastewater Treatment Process Solids

a. For each treatment unit process that involves solids removal from the wastewater stream, records shall include the following:

1) Total volume or mass of solids removed from each collection unit (e.g., grit, skimmings, undigested biosolids, or combination) for each calendar month or other time period as appropriate, but not to exceed annually; and

2) Final disposition of such solids (e.g., landfill, other subsequent treatment unit).

b. For final dewatered biosolids from the treatment plant as a whole, records shall include the following:

1) Total volume or mass of dewatered biosolids for each calendar month;

2) Solids content of the dewatered biosolids; and

3) Final disposition of dewatered biosolids (disposal location and disposal method).

4. Disinfection Process

For the disinfection process, these additional records shall be maintained documenting process operation and performance:

a. For bacteriological analyses:

1) Wastewater flow rate at the time of sample collection; and

2) Required statistical parameters for cumulative bacterial values (e.g., moving median or geometric mean for the number of samples or sampling period identified in this Order).

b. For the chlorination process, when chlorine is used for disinfection, at least daily average values for the following:

1) Chlorine residual of treated wastewater as it enters the contact basin (mg/L);

2) Chlorine dosage (kg/day); and

3) Dechlorination chemical dosage (kg/day).

5. Treatment Process Bypasses

A chronological log of all treatment process bypasses, including wet weather blending, shall include the following:

a. Identification of the treatment process bypassed;

b. Dates and times of bypass beginning and end;

c. Total bypass duration;

d. Estimated total bypass volume; and

e. Description of, or reference to other reports describing, the bypass event, the cause, the corrective actions taken (except for wet weather blending that is in compliance with permit conditions), and any additional monitoring conducted.

6. Treatment Facility Overflows

This section applies to records for overflows at the treatment facility. This includes the headworks and all units and appurtenances downstream. The Discharger shall retain a chronological log of overflows at the treatment facility and records supporting the information provided in section V.E.2.

C. Claims of Confidentiality – Not Supplemented

V. STANDARD PROVISIONS – REPORTING

A. Duty to Provide Information – Not Supplemented

B. Signatory and Certification Requirements – Not Supplemented

C. Monitoring Reports – This section supplements V.C of Standard Provisions (Attachment D)

1. Self Monitoring Reports

For each reporting period established in the MRP, the Discharger shall submit an SMR to the Regional Water Board in accordance with the requirements listed in this document and at the frequency the MRP specifies. The purpose of the SMR is to document treatment performance, effluent quality, and compliance with the waste discharge requirements of this Order.

a. Transmittal letter

Each SMR shall be submitted with a transmittal letter. This letter shall include the following:

1) Identification of all violations of effluent limits or other waste discharge requirements found during the reporting period;

2) Details regarding violations: parameters, magnitude, test results, frequency, and dates;

3) Causes of violations;

4) Discussion of corrective actions taken or planned to resolve violations and prevent recurrences, and dates or time schedule of action implementation (if previous reports have been submitted that address corrective actions, reference to the earlier reports is satisfactory);

5) Data invalidation (Data should not be submitted in an SMR if it does not meet quality assurance/quality control standards. However, if the Discharger wishes to invalidate any measurement after it was submitted in an SMR, a letter shall identify the measurement suspected to be invalid and state the Discharger's intent to submit, within 60 days, a formal request to invalidate the measurement. This request shall include the original measurement in question, the reason for invalidating the measurement, all relevant documentation that

supports invalidation [e.g., laboratory sheet, log entry, test results, etc.], and discussion of the corrective actions taken or planned [with a time schedule for completion] to prevent recurrence of the sampling or measurement problem.);

6) If the Discharger blends, the letter shall describe the duration of blending events and certify whether blended effluent was in compliance with the conditions for blending; and

7) Signature (The transmittal letter shall be signed according to Section V.B of this Order, Attachment D – Standard Provisions.).

b. Compliance evaluation summary

Each report shall include a compliance evaluation summary. This summary shall include each parameter for which the permit specifies effluent limits, the number of samples taken during the monitoring period, and the number of samples that exceed applicable effluent limits.

c. Results of analyses and observations

1) Tabulations of all required analyses and observations, including parameter, date, time, sample station, type of sample, test result, method detection limit, method minimum level, and method reporting level, if applicable, signed by the laboratory director or other responsible official.

2) When determining compliance with an average monthly effluent limitation and more than one sample result is available in a month, the Discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of detected but not quantified (DNQ) or nondetect (ND). In those cases, the Discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:

i. The data set shall be ranked from low to high, reported ND determinations lowest, DNQ determinations next, followed by quantified values (if any). The order of the individual ND or DNQ determinations is unimportant.

ii. The median value of the data set shall be determined. If the data set has an odd number of data points, then the median is the middle value. If the data set has an even number of data points, then the median is the average of the two values around the middle unless one or both of the points are ND or DNQ, in which case the median value shall be the lower of the two data points where DNQ is lower than a value and ND is lower than DNQ.

If a sample result, or the arithmetic mean or median of multiple sample results, is below the reporting limit, and there is evidence that the priority pollutant is present in the effluent above an effluent limitation and the Discharger conducts a Pollutant Minimization Program, the Discharger shall not be deemed out of compliance.

3) Dioxin-TEQ Reporting: The Discharger shall report for each dioxin and furan congener the analytical results of effluent monitoring, including the quantifiable limit (reporting level), the method detection limit, and the measured concentration. The Discharger shall report all measured values of individual congeners, including data qualifiers. When calculating dioxin-TEQ, the Discharger shall set congener concentrations below the minimum levels (ML) to zero. The Discharger shall calculate and report dioxin-TEQs using the following formula,

where the MLs, toxicity equivalency factors (TEFs), and bioaccumulation equivalency factors (BEFs) are as provided in Table A:

$$\text{Dioxin-TEQ} = \Sigma (C_x \times TEF_x \times BEF_x)$$

where: C_x = measured or estimated concentration of congener *x*
TEF_x = toxicity equivalency factor for congener x
BEFx = bioaccumulation equivalency factor for congener *x*

Table A

Minimum Levels, Toxicity Equivalency Factors,
and Bioaccumulation Equivalency Factors

Dioxin or Furan Congener	Minimum Level (pg/L)	1998 Toxicity Equivalency Factor (TEF)	Bioaccumulation Equivalency Factor (BEF)
2,3,7,8-TCDD	10	1.0	1.0
1,2,3,7,8-PeCDD	50	1.0	0.9
1,2,3,4,7,8-HxCDD	50	0.1	0.3
1,2,3,6,7,8-HxCDD	50	0.1	0.1
1,2,3,7,8,9-HxCDD	50	0.1	0.1
1,2,3,4,6,7,8-HpCDD	50	0.01	0.05
OCDD	100	0.0001	0.01
2,3,7,8-TCDF	10	0.1	0.8
1,2,3,7,8-PeCDF	50	0.05	0.2
2,3,4,7,8-PeCDF	50	0.5	1.6
1,2,3,4,7,8-HxCDF	50	0.1	0.08
1,2,3,6,7,8-HxCDF	50	0.1	0.2
1,2,3,7,8,9-HxCDF	50	0.1	0.6
2,3,4,6,7,8-HxCDF	50	0.1	0.7
1,2,3,4,6,7,8-HpCDF	50	0.01	0.01
1,2,3,4,7,8,9-HpCDF	50	0.01	0.4
OCDF	100	0.0001	0.02

d. Data reporting for results not yet available

The Discharger shall make all reasonable efforts to obtain analytical data for required parameter sampling in a timely manner. Certain analyses require additional time to complete analytical processes and report results. For cases where required monitoring parameters require additional time to complete analytical processes and reports, and results are not available in time to be included in the SMR for the subject monitoring period, the Discharger shall describe such circumstances in the SMR and include the data for these parameters and relevant discussions of any observed exceedances in the next SMR due after the results are available.

e. Flow data

The Discharger shall provide flow data tabulation pursuant to Section IV.B.2.

f. Annual self monitoring report requirements

By the date specified in the MRP, the Discharger shall submit an annual report to the Regional Water Board covering the previous calendar year. The report shall contain the following:

1) Annual compliance summary table of treatment plant performance, including documentation of any blending events;

2) Comprehensive discussion of treatment plant performance and compliance with the permit (This discussion shall include any corrective actions taken or planned, such as changes to facility equipment or operation practices that may be needed to achieve compliance, and any other actions taken or planned that are intended to improve performance and reliability of the Discharger's wastewater collection, treatment, or disposal practices.);

3) Both tabular and graphical summaries of the monitoring data for the previous year if parameters are monitored at a frequency of monthly or greater;

4) List of approved analyses, including the following:

(i) List of analyses for which the Discharger is certified;

(ii) List of analyses performed for the Discharger by a separate certified laboratory (copies of reports signed by the laboratory director of that laboratory shall not be submitted but be retained onsite); and

(iii) List of "waived" analyses, as approved;

5) Plan view drawing or map showing the Discharger's facility, flow routing, and sampling and observation station locations;

6) Results of annual facility inspection to verify that all elements of the SWPP Plan are accurate and up to date (only required if the Discharger does not route all storm water to the headworks of its wastewater treatment plant); and

7) Results of facility report reviews (The Discharger shall regularly review, revise, and update, as necessary, the O&M Manual, the Contingency Plan, the Spill Prevention Plan, and Wastewater Facilities Status Report so that these documents remain useful and relevant to current practices. At a minimum, reviews shall be conducted annually. The Discharger shall include, in each Annual Report, a description or summary of review and evaluation procedures, recommended or planned actions, and an estimated time schedule for implementing these actions. The Discharger shall complete changes to these documents to ensure they are up-to-date.).

g. Report submittal

The Discharger shall submit SMRs to:

California Regional Water Quality Control Board
San Francisco Bay Region
1515 Clay Street, Suite 1400
Oakland, CA 94612
Attn: NPDES Wastewater Division

h. Reporting data in electronic format

The Discharger has the option to submit all monitoring results in an electronic reporting format approved by the Executive Officer. If the Discharger chooses to submit SMRs electronically, the following shall apply:

1) *Reporting Method*: The Discharger shall submit SMRs electronically via a process approved by the Executive Officer (see, for example, the letter dated December 17, 1999, "Official Implementation of Electronic Reporting System [ERS]" and the progress report letter dated December 17, 2000).

2) *Monthly or Quarterly Reporting Requirements*: For each reporting period (monthly or quarterly as specified in the MRP), the Discharger shall submit an electronic SMR to the Regional Water Board in accordance with the provisions of Section V.C.1.a-e, except for requirements under Section V.C.1.c(1) where ERS does not have fields for dischargers to input certain information (e.g., sample time). However, until U.S. EPA approves the electronic signature or other signature technologies, Dischargers that use ERS shall submit a hard copy of the original transmittal letter, an ERS printout of the data sheet, and a violation report (a receipt of the electronic transmittal shall be retained by the Discharger). This electronic SMR submittal suffices for the signed tabulations specified under Section V.C.1.c(1).

3) *Annual Reporting Requirements*: Dischargers who have submitted data using the ERS for at least one calendar year are exempt from submitting the portion of the annual report required under Section V.C.1.f(1) and (3).

D. Compliance Schedules – Not supplemented

E. Twenty-Four Hour Reporting – This section supplements V.E of Standard Provision (Attachment D)

1. Spill of Oil or Other Hazardous Material Reports

a. Within 24 hours of becoming aware of a spill of oil or other hazardous material that is not contained onsite and completely cleaned up, the Discharger shall report by telephone to the Regional Water Board at (510) 622-2369.

b. The Discharger shall also report such spills to the State Office of Emergency Services [telephone (800) 852-7550] only when the spills are in accordance with applicable reporting quantities for hazardous materials.

c. The Discharger shall submit a written report to the Regional Water Board within five working days following telephone notification unless directed otherwise by Regional Water Board staff. A report submitted electronically is acceptable. The written report shall include the following:

1) Date and time of spill, and duration if known;

2) Location of spill (street address or description of location);

3) Nature of material spilled;

4) Quantity of material involved;

5) Receiving water body affected, if any;

6) Cause of spill;

7) Estimated size of affected area;

8) Observed impacts to receiving waters (e.g., oil sheen, fish kill, water discoloration);

9) Corrective actions taken to contain, minimize, or clean up the spill;

10) Future corrective actions planned to be taken to prevent recurrence, and schedule of implementation; and

11) Persons or agencies notified.

2. Unauthorized Discharges from Municipal Wastewater Treatment Plants[1]

The following requirements apply to municipal wastewater treatment plants that experience an unauthorized discharge at their treatment facilities and are consistent with and supercede requirements imposed on the Discharger by the Executive Officer by letter of May 1, 2008, issued pursuant to California Water Code Section 13383.

a. Two (2)-Hour Notification

For any unauthorized discharges that result in a discharge to a drainage channel or a surface water, the Discharger shall, as soon as possible, but not later than two (2) hours after becoming aware of the discharge, notify the State Office of Emergency Services (telephone 800-852-7550), the local health officers or directors of environmental health with jurisdiction over the affected water bodies, and the Regional Water Board. The notification to the Regional Water Board shall be via the Regional Water Board's online reporting system at www.wbers.net, and shall include the following:

1) Incident description and cause;

2) Location of threatened or involved waterway(s) or storm drains;

3) Date and time the unauthorized discharge started;

4) Estimated quantity and duration of the unauthorized discharge (to the extent known), and the estimated amount recovered;

[1] California Code of Regulations, Title 23, Section 2250(b), defines an unauthorized discharge to be a discharge, not regulated by waste discharge requirements, of treated, partially treated, or untreated wastewater resulting from the intentional or unintentional diversion of wastewater from a collection, treatment or disposal system.

5) Level of treatment prior to discharge (e.g., raw wastewater, primary treated, undisinfected secondary treated, and so on); and

6) Identity of the person reporting the unauthorized discharge.

b. 24-hour Certification

Within 24 hours, the Discharger shall certify to the Regional Water Board, at www.wbers.net, that the State Office of Emergency Services and the local health officers or directors of environmental health with jurisdiction over the affected water bodies have been notified of the unauthorized discharge.

c. 5-Day Written Report

Within five business days, the Discharger shall submit a written report, via the Regional Water Board's online reporting system at www.wbers.net, that includes, in addition to the information required above, the following:

1) Methods used to delineate the geographical extent of the unauthorized discharge within receiving waters;

2) Efforts implemented to minimize public exposure to the unauthorized discharge;

3) Visual observations of the impacts (if any) noted in the receiving waters (e.g., fish kill, discoloration of water) and the extent of sampling if conducted;

4) Corrective measures taken to minimize the impact of the unauthorized discharge;

5) Measures to be taken to minimize the chances of a similar unauthorized discharge occurring in the future;

6) Summary of Spill Prevention Plan or O&M Manual modifications to be made, if necessary, to minimize the chances of future unauthorized discharges; and

7) Quantity and duration of the unauthorized discharge, and the amount recovered.

d. Communication Protocol

To clarify the multiple levels of notification, certification, and reporting, the current communication requirements for unauthorized discharges from municipal wastewater treatment plants are summarized in Table B that follows.

Table B

Summary of Communication Requirements for Unauthorized Discharges[1] from Municipal Wastewater Treatment Plants

Discharger is required to:	Agency Receiving Information	Time frame	Method for Contact
1. Notify	California Emergency Management Agency (Cal EMA)	As soon as possible, but not later than **2 hours** after becoming aware of the unauthorized discharge.	Telephone – (800) 852-7550 (obtain a control number from Cal EMA)
	Local health department	As soon as possible, but not later than **2 hours** after becoming aware of the unauthorized discharge.	Depends on local health department
	Regional Water Board	As soon as possible, but not later than **2 hours** after becoming aware of the unauthorized discharge.	Electronic[2] www.wbers.net
2. Certify	Regional Water Board	As soon as possible, but not later than **24 hours** after becoming aware of the unauthorized discharge.	Electronic[3] www.wbers.net
3. Report	Regional Water Board	Within **5 business days** of becoming aware of the unauthorized discharge.	Electronic[4] www.wbers.net

[1] California Code of Regulations, Title 23, Section 2250(b), defines an unauthorized discharge to be a discharge, not regulated by waste discharge requirements, of treated, partially treated, or untreated wastewater resulting from the intentional or unintentional diversion of wastewater from a collection, treatment or disposal system.

[2] In the event that the Discharger is unable to provide online notification within 2 hours of becoming aware of an unauthorized discharge, it shall phone the Regional Water Board's spill hotline at (510) 622-2369 and convey the same information contained in the notification form. In addition, within 3 business days of becoming aware of the unauthorized discharge, the Discharger shall enter the notification information into the Regional Water Board's online system in electronic format.

[3] In most instances, the 2-hour notification will also satisfy 24-hour certification requirements. This is because the notification form includes fields for documenting that OES and the local health department have been contacted. In other words, if the Discharger is able to complete all the fields in the notification form within 2 hours, certification requirements are also satisfied. In the event that the Discharger is unable to provide online certification within 24 hours of becoming aware of an unauthorized discharge, it shall phone the Regional Water Board's spill hotline at (510) 622-2369 and convey the same information contained in the certification form. In addition, within 3 business days of becoming aware of the unauthorized discharge, the Discharger shall enter the certification information into the Regional Water Board's online system in electronic format.

[4] If the Discharger cannot satisfy the 5-day reporting requirements via the Regional Water Board's online reporting system, it shall submit a written report (preferably electronically in pdf) to the appropriate Regional Water Board case manager. In cases where the Discharger cannot satisfy the 5-day reporting requirements via the online reporting system, it must still complete the Regional Water Board's online reporting requirements within 15 calendar days of becoming aware of the unauthorized discharge.

F. Planned Changes – Not supplemented

G. Anticipated Noncompliance – Not supplemented

H. Other Noncompliance – Not supplemented

I. Other Information – Not supplemented

VI. STANDARD PROVISION – ENFORCEMENT – Not Supplemented

VII. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS – Not Supplemented

VIII. DEFINITIONS – This section is an addition to Standard Provisions (Attachment D)

More definitions can be found in Attachment A of this NPDES Permit.

1. Arithmetic Calculations

   a. Geometric mean is the antilog of the log mean or the back-transformed mean of the logarithmically transformed variables, which is equivalent to the multiplication of the antilogarithms. The geometric mean can be calculated with either of the following equations:

   $$\text{Geometric Mean} = Anti\log\left(\frac{1}{N}\sum_{i=1}^{N} Log(C_i)\right)$$

   or

   $$\text{Geometric Mean} = (C_1 * C_2 * \ldots * C_N)^{1/N}$$

   Where "N" is the number of data points for the period analyzed and "C" is the concentration for each of the "N" data points.

   b. Mass emission rate is obtained from the following calculation for any calendar day:

   $$\text{Mass emission rate (lb/day)} = \frac{8.345}{N}\sum_{i=1}^{N} Q_i C_i$$

   $$\text{Mass emission rate (kg/day)} = \frac{3.785}{N}\sum_{i=1}^{N} Q_i C_i$$

   In which "N" is the number of samples analyzed in any calendar day and "Q_i" and "C_i" are the flow rate (MGD) and the constituent concentration (mg/L) associated with each of the "N" grab samples that may be taken in any calendar day. If a composite sample is taken, "C_i" is the concentration measured in the composite sample and "Q_i" is the average flow rate occurring during the period over which the samples are composited. The daily concentration of a constituent measured over any calendar day shall be determined from the flow-weighted average of the same constituent in the combined waste streams as follows:

Cd = Average daily concentration = $\frac{1}{Q_t}\sum_{i=1}^{N} Q_i C_i$

In which "N" is the number of component waste streams and "Q" and "C" are the flow rate (MGD) and the constituent concentration (mg/L) associated with each of the "N" waste streams. "Q_t" is the total flow rate of the combined waste streams.

c. Maximum allowable mass emission rate, whether for a 24-hour, weekly 7-day, monthly 30-day, or 6-month period, is a limitation expressed as a daily rate determined with the formulas in the paragraph above, using the effluent concentration limit specified in the permit for the period and the specified allowable flow.

d. POTW removal efficiency is the ratio of pollutants removed by the treatment facilities to pollutants entering the treatment facilities (expressed as a percentage). The Discharger shall determine removal efficiencies using monthly averages (by calendar month unless otherwise specified) of pollutant concentration of influent and effluent samples collected at about the same time and using the following equation (or its equivalent):

Removal Efficiency (%) = 100 × [1-(Effluent Concentration/Influent Concentration)]

2. Biosolids means the solids, semi-liquid suspensions of solids, residues, screenings, grit, scum, and precipitates separated from or created in wastewater by the unit processes of a treatment system. It also includes, but is not limited to, all supernatant, filtrate, centrate, decantate, and thickener overflow and underflow in the solids handling parts of the wastewater treatment system.

3. Blending is the practice of recombining wastewater that has been biologically treated with wastewater that has bypassed around biological treatment units.

4. Bottom sediment sample is (1) a separate grab sample taken at each sampling station for the determination of selected physical-chemical parameters, or (2) four grab samples collected from different locations in the immediate vicinity of a sampling station while the boat is anchored and analyzed separately for macroinvertebrates.

5. Composite sample is a sample composed of individual grab samples collected manually or by an automatic sampling device on the basis of time or flow as specified in the MRP. For flow-based composites, the proportion of each grab sample included in the composite sample shall be within plus or minus five percent (+/-5%) of the representative flow rate of the waste stream being measured at the time of grab sample collection. Alternatively, equal volume grab samples may be individually analyzed with the flow-weighted average calculated by averaging flow-weighted ratios of each grab sample analytical result. Grab samples comprising time-based composite samples shall be collected at intervals not greater than those specified in the MRP. The quantity of each grab sample comprising a time-based composite sample shall be a set of flow proportional volumes as specified in the MRP. If a particular time-based or flow-based composite sampling protocol is not specified in the MRP, the Discharger shall determine and implement the most representative sampling protocol for the given parameter subject to Executive Officer approval.

6. Depth-integrated sample is defined as a water or waste sample collected by allowing a sampling device to fill during a vertical traverse in the waste or receiving water body being sampled. The Discharger shall collect depth-integrated samples in such a manner that the collected sample will be representative of the waste or water body at that sampling point.

7. Flow sample is an accurate measurement of the average daily flow volume using a properly calibrated and maintained flow measuring device.

8. Grab sample is an individual sample collected in a short period of time not exceeding 15 minutes. Grab samples represent only the condition that exists at the time the wastewater is collected.

9. Initial dilution is the process that results in the rapid and irreversible turbulent mixing of wastewater with receiving water around the point of discharge.

10. Overflow is the intentional or unintentional spilling or forcing out of untreated or partially treated wastes from a transport system (e.g., through manholes, at pump stations, and at collection points) upstream from the treatment plant headworks or from any part of a treatment plant facility.

11. Priority pollutants are those constituents referred to in 40 CFR Part 122 as promulgated in the Federal Register, Vol. 65, No. 97, Thursday, May 18, 2000, also known as the California Toxics Rule, the presence or discharge of which could reasonably be expected to interfere with maintaining designated uses.

12. Storm water means storm water runoff, snow melt runoff, and surface runoff and drainage. It excludes infiltration and runoff from agricultural land.

13. Toxic pollutant means any pollutant listed as toxic under federal Clean Water Act section 307(a)(1) or under 40 CFR 401.15.

14. Untreated waste is raw wastewater.

15. Waste, waste discharge, discharge of waste, and discharge are used interchangeably in the permit. The requirements of the permit apply to the entire volume of water, and the material therein, that is disposed of to surface and ground waters of the State of California.

Table C

List of Monitoring Parameters and Analytical Methods

CTR No.	Pollutant/Parameter	Analytical Method[1]	Minimum Levels[2] (µg/l)											
			GC	GCMS	LC	Color	FAA	GFAA	ICP	ICP MS	SPGFAA	HYD RIDE	CVAA	DCP
1.	Antimony	204.2					10	5	50	0.5	5	0.5		1000
2.	Arsenic	206.3				20		2	10	2	2	1		1000
3.	Beryllium						20	0.5	2	0.5	1			1000
4.	Cadmium	200 or 213					10	0.5	10	0.25	0.5			1000
5a.	Chromium (III)	SM 3500												
5b.	Chromium (VI)	SM 3500				10	5							1000
	Chromium (total)[3]	SM 3500					50	2	10	0.5	1			1000
6.	Copper	200.9					25	5	10	0.5	2			1000
7.	Lead	200.9					20	5	5	0.5	2			10,000
8.	Mercury	1631 (note)[4]												
9.	Nickel	249.2					50	5	20	1	5			1000
10.	Selenium	200.8 or SM 3114B or C						5	10	2	5	1		1000
11.	Silver	272.2					10	1	10	0.25	2			1000
12.	Thallium	279.2					10	2	10	1	5			1000
13.	Zinc	200 or 289					20		20	1	10			
14.	Cyanide	SM 4500 CN^- C or I				5								
15.	Asbestos (only required for dischargers to MUN waters)[5]	0100.2 [6]												
16.	2,3,7,8-TCDD and 17 congeners (Dioxin)	1613												
17.	Acrolein	603	2.0	5										
18.	Acrylonitrile	603	2.0	2										
19.	Benzene	602	0.5	2										
33.	Ethylbenzene	602	0.5	2										
39.	Toluene	602	0.5	2										
20.	Bromoform	601	0.5	2										
21.	Carbon Tetrachloride	601	0.5	2										
22.	Chlorobenzene	601	0.5	2										
23.	Chlorodibromomethane	601	0.5	2										
24.	Chloroethane	601	0.5	2										

[1] The suggested method is the U.S. EPA Method unless otherwise specified (SM = Standard Methods). The Discharger may use another U.S. EPA-approved or recognized method if that method has a level of quantification below the applicable water quality objective. Where no method is suggested, the Discharger has the discretion to use any standard method.

[2] Minimum levels are from the *State Implementation Policy*. They are the concentration of the lowest calibration standard for that technique based on a survey of contract laboratories. Laboratory techniques are defined as follows: GC = Gas Chromatography; GCMS = Gas Chromatography/Mass Spectrometry; LC = High Pressure Liquid Chromatography; Color = Colorimetric; FAA = Flame Atomic Absorption; GFAA = Graphite Furnace Atomic Absorption; ICP = Inductively Coupled Plasma; ICPMS = Inductively Coupled Plasma/Mass Spectrometry; SPGFAA = Stabilized Platform Graphite Furnace Atomic Absorption (i.e., U.S. EPA 200.9); Hydride = Gaseous Hydride Atomic Absorption; CVAA = Cold Vapor Atomic Absorption; DCP = Direct Current Plasma.

[3] Analysis for total chromium may be substituted for analysis of chromium (III) and chromium (VI) if the concentration measured is below the lowest hexavalent chromium criterion (11 ug/l).

[4] The Discharger shall use ultra-clean sampling (U.S. EPA Method 1669) and ultra-clean analytical methods (U.S. EPA Method 1631) for mercury monitoring. The minimum level for mercury is 2 ng/l (or 0.002 ug/l).

[5] MUN = Municipal and Domestic Supply. This designation, if applicable, is in the Findings of the permit.

[6] Determination of Asbestos Structures over 10 [micrometers] in Length in Drinking Water Using MCE Filters, U.S. EPA 600/R-94-134, June 1994.

CTR No.	Pollutant/Parameter	Analytical Method[1]	Minimum Levels[2] (µg/l)											
			GC	GCMS	LC	Color	FAA	GFAA	ICP	ICP MS	SPGFAA	HYD RIDE	CVAA	DCP
25.	2-Chloroethylvinyl Ether	601	1	1										
26.	Chloroform	601	0.5	2										
75.	1,2-Dichlorobenzene	601	0.5	2										
76.	1,3-Dichlorobenzene	601	0.5	2										
77.	1,4-Dichlorobenzene	601	0.5	2										
27.	Dichlorobromomethane	601	0.5	2										
28.	1,1-Dichloroethane	601	0.5	1										
29.	1,2-Dichloroethane	601	0.5	2										
30.	1,1-Dichloroethylene or 1,1-Dichloroethene	601	0.5	2										
31.	1,2-Dichloropropane	601	0.5	1										
32.	1,3-Dichloropropylene or 1,3-Dichloropropene	601	0.5	2										
34.	Methyl Bromide or Bromomethane	601	1.0	2										
35.	Methyl Chloride or Chloromethane	601	0.5	2										
36.	Methylene Chloride or Dichlorormethane	601	0.5	2										
37.	1,1,2,2-Tetrachloroethane	601	0.5	1										
38.	Tetrachloroethylene	601	0.5	2										
40.	1,2-Trans-Dichloroethylene	601	0.5	1										
41.	1,1,1-Trichloroethane	601	0.5	2										
42.	1,1,2-Trichloroethane	601	0.5	2										
43.	Trichloroethene	601	0.5	2										
44.	Vinyl Chloride	601	0.5	2										
45.	2-Chlorophenol	604	2	5										
46.	2,4-Dichlorophenol	604	1	5										
47.	2,4-Dimethylphenol	604	1	2										
48.	2-Methyl-4,6-Dinitrophenol or Dinitro-2-methylphenol	604	10	5										
49.	2,4-Dinitrophenol	604	5	5										
50.	2-Nitrophenol	604		10										
51.	4-Nitrophenol	604	5	10										
52.	3-Methyl-4-Chlorophenol	604	5	1										
53.	Pentachlorophenol	604	1	5										
54.	Phenol	604	1	1		50								
55.	2,4,6-Trichlorophenol	604	10	10										
56.	Acenaphthene	610 HPLC	1	1	0.5									
57.	Acenaphthylene	610 HPLC		10	0.2									
58.	Anthracene	610 HPLC		10	2									
60.	Benzo(a)Anthracene or 1,2 Benzanthracene	610 HPLC	10	5										
61.	Benzo(a)Pyrene	610 HPLC		10	2									
62.	Benzo(b)Fluoranthene or 3,4 Benzofluoranthene	610 HPLC		10	10									
63.	Benzo(ghi)Perylene	610 HPLC		5	0.1									
64.	Benzo(k)Fluoranthene	610 HPLC		10	2									
74.	Dibenzo(a,h)Anthracene	610 HPLC		10	0.1									
86.	Fluoranthene	610 HPLC	10	1	0.05									
87.	Fluorene	610 HPLC		10	0.1									
92.	Indeno(1,2,3-cd) Pyrene	610 HPLC		10	0.05									
100.	Pyrene	610 HPLC		10	0.05									

CTR No.	Pollutant/Parameter	Analytical Method[1]	Minimum Levels[2] (µg/l)											
			GC	GCMS	LC	Color	FAA	GFAA	ICP	ICP MS	SPGFAA	HYD RIDE	CVAA	DCP
68.	Bis(2-Ethylhexyl)Phthalate	606 or 625	10	5										
70.	Butylbenzyl Phthalate	606 or 625	10	10										
79.	Diethyl Phthalate	606 or 625	10	2										
80.	Dimethyl Phthalate	606 or 625	10	2										
81.	Di-n-Butyl Phthalate	606 or 625		10										
84.	Di-n-Octyl Phthalate	606 or 625		10										
59.	Benzidine	625		5										
65.	Bis(2-Chloroethoxy)Methane	625		5										
66.	Bis(2-Chloroethyl)Ether	625	10	1										
67.	Bis(2-Chloroisopropyl)Ether	625	10	2										
69.	4-Bromophenyl Phenyl Ether	625	10	5										
71.	2-Chloronaphthalene	625		10										
72.	4-Chlorophenyl Phenyl Ether	625		5										
73.	Chrysene	625		10	5									
78.	3,3'-Dichlorobenzidine	625		5										
82.	2,4-Dinitrotoluene	625	10	5										
83.	2,6-Dinitrotoluene	625		5										
85.	1,2-Diphenylhydrazine (note)[7]	625		1										
88.	Hexachlorobenzene	625	5	1										
89.	Hexachlorobutadiene	625	5	1										
90.	Hexachlorocyclopentadiene	625	5	5										
91.	Hexachloroethane	625	5	1										
93.	Isophorone	625	10	1										
94.	Naphthalene	625	10	1	0.2									
95.	Nitrobenzene	625	10	1										
96.	N-Nitrosodimethylamine	625	10	5										
97.	N-Nitrosodi-n-Propylamine	625	10	5										
98.	N-Nitrosodiphenylamine	625	10	1										
99.	Phenanthrene	625		5	0.05									
101.	1,2,4-Trichlorobenzene	625	1	5										
102.	Aldrin	608	0.005											
103.	α-BHC	608	0.01											
104.	β-BHC	608	0.005											
105.	γ-BHC (Lindane)	608	0.02											
106.	δ-BHC	608	0.005											
107.	Chlordane	608	0.1											
108.	4,4'-DDT	608	0.01											
109.	4,4'-DDE	608	0.05											
110.	4,4'-DDD	608	0.05											
111.	Dieldrin	608	0.01											
112.	Endosulfan (alpha)	608	0.02											
113.	Endosulfan (beta)	608	0.01											
114.	Endosulfan Sulfate	608	0.05											
115.	Endrin	608	0.01											
116.	Endrin Aldehyde	608	0.01											
117.	Heptachlor	608	0.01											

[7] Measurement for 1,2-Diphenylhydrazine may use azobenzene as a screen: if azobenzene is measured at >1 ug/l, then the Discharger shall analyze for 1,2-Diphenylhydrazine.

CTR No.	Pollutant/Parameter	Analytical Method[1]	Minimum Levels[2] (µg/l)											
			GC	GCMS	LC	Color	FAA	GFAA	ICP	ICP MS	SPGFAA	HYD RIDE	CVAA	DCP
118.	Heptachlor Epoxide	608	0.01											
119-125	PCBs: Aroclors 1016, 1221, 1232, 1242, 1248, 1254, 1260	608	0.5											
126.	Toxaphene	608	0.5											

ATTACHMENT H – PRETREATMENT REQUIREMENTS

CALIFORNIA REGIONAL WATER QUALITY CONTROL
BOARD
SAN FRANCISCO BAY REGION

ATTACHMENT H
PRETREATMENT PROGRAM PROVISIONS

For

NPDES POTW WASTEWATER DISCHARGE PERMITS

March 2011
(Corrected May 2011)

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Attachment H: Pretreatment Program Provisions

A. The Discharger shall be responsible and liable for the performance of all Control Authority pretreatment requirements contained in 40 CFR 403, including any regulatory revisions to Part 403. Where a Part 403 revision is promulgated after the effective date of the Discharger's permit and places mandatory actions upon the Discharger as Control Authority but does not specify a timetable for completion of the actions, the Discharger shall complete the required actions within six months from the issuance date of this permit or six months from the effective date of the Part 403 revisions, whichever comes later.

(If the Discharger cannot complete the required actions within the above six-month period due to the need to process local adoption of sewer use ordinance modifications or other substantial pretreatment program modifications, the Discharger shall notify the Executive Officer in writing at least 60 days prior to the six-month deadline. The written notification shall include a summary of completed required actions, an explanation for why the six month deadline cannot be met, and a proposed timeframe to complete the rest of the required actions as soon as practical but not later than within twelve months of the issuance date of this permit or twelve months of the effective date of the Part 403 revisions, whichever comes later. The Executive Officer will notify the Discharger in writing within 30 days of receiving the request if the extension is not approved.)

The United States Environmental Protection Agency (U.S. EPA), the State and/or other appropriate parties may initiate enforcement action against a nondomestic user for noncompliance with applicable standards and requirements as provided in the Clean Water Act (Act).

B. The Discharger shall enforce the requirements promulgated under Sections 307(b), 307(c), 307(d) and 402(b) of the Act with timely, appropriate and effective enforcement actions. The Discharger shall cause nondomestic users subject to Federal Categorical Standards to achieve compliance no later than the date specified in those requirements or, in the case of a new nondomestic user, upon commencement of the discharge.

C. The Discharger shall perform the pretreatment functions as required in 40 CFR 403 and amendments or modifications thereto including, but not limited to:

1. Implement the necessary legal authorities to fully implement the pretreatment regulations as provided in 40 CFR 403.8(f)(1);

2. Implement the programmatic functions as provided in 40 CFR 403.8(f)(2);

3. Publish an annual list of nondomestic users in significant noncompliance as provided per 40 CFR 403.8(f)(2)(viii);

4. Provide for the requisite funding and personnel to implement the pretreatment program as provided in 40 CFR 403.8(f)(3); and

5. Enforce the national pretreatment standards for prohibited discharges and categorical standards as provided in 40 CFR 403.5 and 403.6, respectively.

D. The Discharger shall submit annually a report to U.S. EPA Region 9, the State Water Board and the Regional Water Board describing its pretreatment program activities over the previous calendar year. In the event that the Discharger is not in compliance with any conditions or requirements of the Pretreatment Program, the Discharger shall also include the reasons for noncompliance and a plan and schedule for achieving compliance. The report shall contain, but is not limited to, the information specified in Appendix H-1 entitled, "Requirements for Pretreatment Annual Reports." The annual report is due each year on February 28.

E. The Discharger shall submit a pretreatment semiannual report to U.S. EPA Region 9, the State Water Board and the Regional Water Board describing the status of its significant industrial users (SIUs). The report shall contain, but is not limited to, information specified in Appendix H-2 entitled, "Requirements for Pretreatment Semiannual Reports." The semiannual report is due July 31 for the period January through June. The information for the period July through December of each year shall be included in the Annual Report identified in Appendix H-1. The Executive Officer may exempt the Discharger from the semiannual reporting requirements on a case by case basis subject to State Water Board and U.S. EPA's comment and approval.

F. The Discharger shall conduct the monitoring of its treatment plant's influent, effluent, and sludge (biosolids) as described in Appendix H-4 entitled, "Requirements for Influent, Effluent and Sludge (Biosolids) Monitoring." (The term "biosolids," as used in this Attachment, shall have the same meaning as wastewater treatment plant "sludge" and will be used from this point forward.) The Discharger shall evaluate the results of the sampling and analysis during the preparation of the semiannual and annual reports to identify any trends. Signing the certification statement used to transmit the reports shall be deemed to certify the Discharger has completed this data evaluation. A tabulation of the data shall be included in the pretreatment annual report as specified in Appendix H-4. The Executive Officer may require more or less frequent monitoring on a case by case basis.

APPENDIX H-1

REQUIREMENTS FOR PRETREATMENT ANNUAL REPORTS

The Pretreatment Annual Report is due each year on February 28 and shall contain activities conducted during the previous calendar year. The purpose of the Annual Report is to:

- Describe the status of the Discharger's pretreatment program; and
- Report on the effectiveness of the program, as determined by comparing the results of the preceding year's program implementation.

The report shall contain, at a minimum, the following information:

A. Cover Sheet

The cover sheet shall include:

1. The name(s) and National Pollutant Discharge Elimination Discharge System (NPDES) permit number(s) of the Discharger(s) that is part of the Pretreatment Program;

2. The name, address and telephone number of a pretreatment contact person;

3. The period covered in the report;

4. A statement of truthfulness; and

5. The dated signature of a principal executive officer, ranking elected official, or other duly authorized employee who is responsible for overall operation of the Publicly Owned Treatment Works (POTW) (40 CFR 403.12(m)).

B. Introduction

This section shall include:

1. Any pertinent background information related to the Discharger and/or the nondomestic user base of the area;

2. List of applicable interagency agreements used to implement the Discharger's pretreatment program (e.g., Memoranda of Understanding (MOU) with satellite sanitary sewer collection systems); and

3. A status summary of the tasks required by a Pretreatment Compliance Inspection (PCI), Pretreatment Compliance Audit (PCA), Cleanup and Abatement Order (CAO), or other pretreatment-related enforcement actions required by the Regional Water Board or the U.S. EPA. A more detailed discussion can be referenced and included in the section entitled, "Program Changes," if needed.

C. Definitions

This section shall include a list of key terms and their definitions that the Discharger uses to describe or characterize elements of its pretreatment program, or the Discharger may provide a reference to its website if the applicable definitions are available on-line.

D. Discussion of Upset, Interference and Pass Through

This section shall include a discussion of Upset, Interference or Pass Through incidents, if any, at the Discharger's treatment plant(s) that the Discharger knows of or suspects were caused by nondomestic user discharges. Each incident shall be described, at a minimum, consisting of the following information:

1. A description of what occurred;

2. A description of what was done to identify the source;

3. The name and address of the nondomestic user responsible;

4. The reason(s) why the incident occurred;

5. A description of the corrective actions taken; and

6. An examination of the local and federal discharge limits and requirements for the purposes of determining whether any additional limits or changes to existing requirements may be necessary to prevent other Upset, Interference or Pass Through incidents.

E. Influent, Effluent and Biosolids Monitoring Results

The Discharger shall evaluate the influent, effluent and biosolids monitoring results as specified in Appendix H-4 in preparation of this report. The Discharger shall retain the analytical laboratory reports with the Quality Assurance and Quality Control (QA/QC) data validation and make these reports available upon request.

This section shall include:

1. Description of the sampling procedures and an analysis of the results (see Appendix H-4 for specific requirements);
2. Tabular summary of the compounds detected (compounds measured above the detection limit for the analytical method used) for the monitoring data generated during the reporting year as specified in Appendix H-4;
3. Discussion of the investigation findings into any contributing sources of the compounds that exceed NPDES limits; and
4. Graphical representation of the influent and effluent metal monitoring data for the past five years with a discussion of any trends.

F. Inspection, Sampling and Enforcement Programs

This section shall include at a minimum the following information:

1. Inspections: Summary of the inspection program (e.g., criteria for determining the frequency of inspections and inspection procedures);

2. Sampling Events: Summary of the sampling program (e.g., criteria for determining the frequency of sampling and chain of custody procedures); and

3. Enforcement: Summary of Enforcement Response Plan (ERP) implementation including dates for adoption, last revision and submission to the Regional Water Board.

G. Updated List of Regulated SIUs

This section shall contain a list of all of the federal categories that apply to SIUs regulated by the Discharger. The specific categories shall be listed including the applicable 40 CFR subpart and section, and pretreatment standards (both maximum and average limits). Local limits developed by the Discharger shall be presented in a table including the applicability of the local limits to SIUs. If local limits do not apply uniformly to SIUs, specify the applicability in the tables listing the categorical industrial users (CIUs) and non-categorical SIUs. Tables developed in Sections 7A and 7B can be used to present or reference this information.

1. CIUs - Include a table that alphabetically lists the CIUs regulated by the Discharger as of the end of the reporting period. This list shall include:

   a. Name;

   b. Address;

   c. Applicable federal category(ies);

   d. Reference to the location where the applicable Federal Categorical Standards are presented in the report;

   e. Identify all deletions and additions keyed to the list submitted in the previous annual report. All deletions shall be briefly explained (e.g., closure, name change, ownership change, reclassification, declassification); and

   f. Information, calculations and data used to determine the limits for those CIUs for which a combined waste stream formula is applied.

2. Non-categorical SIUs - Include a table that alphabetically lists the SIUs not subject to any federal categorical standards that were regulated by the Discharger as of the end of the reporting period. This list shall include:

   a. Name;

b. Address;

c. A brief description of the type of business;

d. Identify all deletions and additions keyed to the list submitted in the previous annual report. All deletions shall be briefly explained (e.g., closure, name change, ownership change, reclassification, declassification); and

e. Indicate the applicable discharge limits (e.g., different from local limits) to which the SIUs are subject and reference to the location where the applicable limits (e.g., local discharge limits) are presented in the report.

H. SIU (categorical and non-categorical) Compliance Activities

The information required in this section may be combined in the table developed in Section 7 above.

1. **Inspection and Sampling Summary:** This section shall contain a summary of all the SIU inspections and sampling activities conducted by the Discharger and sampling activities conducted by the SIU over the reporting year to gather information and data regarding SIU compliance. The summary shall include:

   a. The number of inspections and sampling events conducted for each SIU by the Discharger;

   b. The number of sampling events conducted by the SIU. Identify SIUs that are operating under an approved Total Toxic Organic Management Plan;

   c. The quarters in which the above activities were conducted; and

   d. The compliance status of each SIU, delineated by quarter, and characterized using all applicable descriptions as given below:

      (1) Consistent compliance;

      (2) Inconsistent compliance;

      (3) Significant noncompliance;

      (4) On a compliance schedule to achieve compliance (include the date final compliance is required);

      (5) Not in compliance and not on a compliance schedule; and

      (6) Compliance status unknown, and why not.

2. **Enforcement Summary:** This section shall contain a summary of SIU compliance and enforcement activities during the reporting year. The summary may be included in the summary

table developed in section 8A and shall include the names and addresses of all SIUs affected by the actions identified below. For each notice specified in enforcement action "i" through "iv," indicate whether it was for an infraction of a federal or local standard/limit or requirement.

a. Warning letters or notices of violations regarding SIUs' apparent noncompliance with or violation of any federal pretreatment categorical standards and/or requirements, or local limits and/or requirements;

b. Administrative Orders regarding the SIUs' apparent noncompliance with or violation of any federal pretreatment categorical standards and/or requirements, or local limits and/or requirements;

c. Civil actions regarding the SIUs' apparent noncompliance with or violation of any federal pretreatment categorical standards and/or requirements, or local limits and/or requirements;

d. Criminal actions regarding the SIUs' apparent noncompliance with or violation of any federal pretreatment categorical standards and/or requirements, or local limits and/or requirements;

e. Assessment of monetary penalties. Identify the amount of penalty in each case and reason for assessing the penalty;

f. Order to restrict/suspend discharge to the Discharger; and

g. Order to disconnect the discharge from entering the Discharger.

3. July-December Semiannual Data: For SIU violations/noncompliance during the semiannual reporting period from July 1 through December 31, provide the following information:

a. Name and facility address of the SIU;

b. Indicate if the SIU is subject to Federal Categorical Standards; if so, specify the category including the subpart that applies;

c. For SIUs subject to Federal Categorical Standards, indicate if the violation is of a categorical or local standard;

d. Indicate the compliance status of the SIU for the two quarters of the reporting period; and

e. For violations/noncompliance identified in the reporting period, provide:

(1) The date(s) of violation(s);

(2) The parameters and corresponding concentrations exceeding the limits and the discharge limits for these parameters; and

(3) A brief summary of the noncompliant event(s) and the steps that are being taken to achieve compliance.

I. Baseline Monitoring Report Update

This section shall provide a list of CIUs added to the pretreatment program since the last annual report. This list of new CIUs shall summarize the status of the respective Baseline Monitoring Reports (BMR). The BMR must contain the information specified in 40 CFR 403.12(b). For each new CIU, the summary shall indicate when the BMR was due; when the CIU was notified by the Discharger of this requirement; when the CIU submitted the report; and/or when the report is due.

J. Pretreatment Program Changes

This section shall contain a description of any significant changes in the Pretreatment Program during the past year including, but not limited to:

1. Legal authority;
2. Local limits;
3. Monitoring/ inspection program and frequency;
4. Enforcement protocol;
5. Program's administrative structure;
6. Staffing level;
7. Resource requirements;
8. Funding mechanism;
9. If the manager of the Discharger's pretreatment program changed, a revised organizational chart shall be included; and
10. If any element(s) of the program is in the process of being modified, this intention shall also be indicated.

K. Pretreatment Program Budget

This section shall present the budget spent on the Pretreatment Program. The budget, either by the calendar or fiscal year, shall show the total expenses required to implement the pretreatment program. A brief discussion of the source(s) of funding shall be provided. In addition, the Discharger shall make available upon request specific details on its pretreatment program expense amounts such as for personnel, equipment, and chemical analyses.

L. Public Participation Summary

This section shall include a copy of the public notice as required in 40 CFR 403.8(f)(2)(viii). If a notice was not published, the reason shall be stated.

M. Biosolids Storage and Disposal Practice

This section shall describe how treated biosolids are stored and ultimately disposed. If a biosolids storage area is used, it shall be described in detail including its location, containment features and biosolids handling procedures.

N. Other Pollutant Reduction Activities

This section shall include a brief description of any programs the Discharger implements to reduce pollutants from nondomestic users that are not classified as SIUs. If the Discharger submits any of this program information in an Annual Pollution Prevention Report, reference to this other report shall satisfy this reporting requirement.

O. Other Subjects

Other information related to the Pretreatment Program that does not fit into any of the above categories should be included in this section.

P. Permit Compliance System (PCS) Data Entry Form

The annual report shall include the PCS Data Entry Form. This form shall summarize the enforcement actions taken against SIUs in the past year. This form shall include the following information:

1. Discharger's name,

2. NPDES Permit number,

3. Period covered by the report,

4. Number of SIUs in significant noncompliance (SNC) that are on a pretreatment compliance schedule,

5. Number of notices of violation and administrative orders issued against SIUs,

6. Number of civil and criminal judicial actions against SIUs,

7. Number of SIUs that have been published as a result of being in SNC, and

8. Number of SIUs from which penalties have been collected.

APPENDIX H-2

REQUIREMENTS FOR JANUARY-JUNE PRETREATMENT SEMIANNUAL REPORT

The pretreatment semiannual report is due on July 31 for pretreatment program activities conducted from January through June unless an exception has been granted by the Regional Water Board's Executive Officer (e.g., pretreatment programs without any SIUs may qualify for an exception to the pretreatment semiannual report). Pretreatment activities conducted from July through December of each year shall be included in the Pretreatment Annual Report as specified in Appendix H-1. The pretreatment semiannual report shall contain, at a minimum the following information:

A. Influent, Effluent and Biosolids Monitoring

The influent, effluent and biosolids monitoring results shall be evaluated in preparation of this report. The Discharger shall retain analytical laboratory reports with the QA/QC data validation and make these reports available upon request. The Discharger shall also make available upon request a description of its influent, effluent and biosolids sampling procedures. Violations of any parameter that exceed NPDES limits shall be identified and reported. The contributing source(s) of the parameters that exceed NPDES limits shall be investigated and discussed.

B. Significant Industrial User Compliance Status

This section shall contain a list of all SIUs that were not in consistent compliance with all pretreatment standards/limits or requirements for the reporting period. For the reported SIUs, the compliance status for the previous semiannual reporting period shall be included. Once the SIU has determined to be out of compliance, the SIU shall be included in subsequent reports until consistent compliance has been achieved. A brief description detailing the actions that the SIU undertook to come back into compliance shall be provided.

For each SIU on the list, the following information shall be provided:

1. Name and facility address of the SIU;

2. Indicate if the SIU is subject to Federal Categorical Standards; if so, specify the category including the subpart that applies;

3. For SIUs subject to Federal Categorical Standards, indicate if the violation is of a categorical or local standard;

4. Indicate the compliance status of the SIU for the two quarters of the reporting period; and

5. For violations/noncompliance identified in the reporting period, provide:

    a. The date(s) of violation(s);

    b. The parameters and corresponding concentrations exceeding the limits and the discharge limits for these parameters; and

c. A brief summary of the noncompliant event(s) and the steps that are being taken to achieve compliance.

C. Discharger's Compliance with Pretreatment Program Requirements

This section shall contain a discussion of the Discharger's compliance status with the Pretreatment Program Requirements as indicated in the latest Pretreatment Compliance Audit (PCA) Report or Pretreatment Compliance Inspection (PCI) Report. It shall contain a summary of the following information:

1. Date of latest PCA or PCI report;

2. Date of the Discharger's response;

3. List of unresolved issues; and

4. Plan(s) and schedule for resolving the remaining issues.

APPENDIX H-3

SIGNATURE REQUIREMENTS FOR PRETREATMENT ANNUAL AND SEMIANNUAL REPORTS

The pretreatment annual and semiannual reports shall be signed by a principal executive officer, ranking elected official, or other duly authorized employee who is responsible for the overall operation of the Discharger [POTW - 40 CFR 403.12(m)]. Signed copies of the reports shall be submitted to the U.S. EPA, the State Water Board, and the Regional Water Board at the following addresses unless the Discharger is instructed by any of these agencies to submit electronic copies of the required reports:

Pretreatment Program Reports
Clean Water Act Compliance Office (WTR-7)
Water Division
Pacific Southwest Region
U.S. Environmental Protection Agency
75 Hawthorne Street
San Francisco, CA 94105-3901

Submit electronic copies only to State and Regional Water Boards:
Pretreatment Program Manager
Regulatory Unit
State Water Resources Control Board
Division of Water Quality-15th Floor
1001 I Street
Sacramento, CA 95814
DMR@waterboards.ca.gov
NPDES_Wastewater@waterboards.ca.gov

Pretreatment Coordinator
NPDES Wastewater Division
SF Bay Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, CA 94612
(Submit the report as a single Portable Document Format (PDF) file to the Pretreatment Coordinator's folder in the Regional Water Board's File Transfer Protocol (FTP) site. The instructions for using the FTP site can be found at the following internet address:
http://www.waterboards.ca.gov/sanfranciscobay/publications_forms/documents/FTP_Discharger_Guide-12-2010.pdf.)

APPENDIX H-4

REQUIREMENTS FOR INFLUENT, EFFLUENT AND BIOSOLIDS MONITORING

The Discharger shall conduct sampling of its treatment plant's influent, effluent and biosolids at the frequency shown in **the pretreatment requirements table** of the Monitoring and Reporting Program (MRP, Attachment E). When sampling periods coincide, one set of test results, reported separately, may be used for those parameters that are required to be monitored by both the influent and effluent monitoring requirements of the MRP and the Pretreatment Program. The Pretreatment Program monitoring reports as required in Appendices H-1 and H-2 shall be transmitted to the Pretreatment Program Coordinator.

A. Reduction of Monitoring Frequency

The minimum frequency of Pretreatment Program influent, effluent, and biosolids monitoring shall be dependent on the number of SIUs identified in the Discharger's Pretreatment Program as indicated in Table H-1.

Table H-1: Minimum Frequency of Pretreatment Program Monitoring	
Number of SIUs	Minimum Frequency
< 5	Once every five years
> 5 and < 50	Once every year
> 50	Twice per year

If the Discharger's required monitoring frequency is greater than the minimum specified in Table H-1, the Discharger may request a reduced monitoring frequency for that constituent(s) as part of its application for permit reissuance if it meets the following criteria:

The monitoring data for the constituent(s) consistently show non-detect (ND) levels for the effluent monitoring and very low (i.e., near ND) levels for influent and biosolids monitoring for a minimum of eight previous years' worth of data.

The Discharger's request shall include tabular summaries of the data and a description of the trends in the industrial, commercial, and residential customers in the Discharger's service area that demonstrate control over the sources of the constituent(s). The Regional Water Board may grant a reduced monitoring frequency in the reissued permit after considering the information provided by the Discharger and any other relevant information.

B. Influent and Effluent Monitoring

The Discharger shall monitor for the parameters using the required sampling and test methods listed in **the pretreatment table** of the MRP. Any test method substitutions must have received prior written Executive Officer approval. Influent and effluent sampling locations shall be the same as those sites specified in the MRP.

The influent and effluent samples should be taken at staggered times to account for treatment plant detention time. Appropriately staggered sampling is considered consistent with the requirement for

collection of effluent samples coincident with influent samples in Section III.A.3.a(2) of Attachment G. All samples must be representative of daily operations. Sampling and analysis shall be performed in accordance with the techniques prescribed in 40 CFR 136 and amendments thereto. For effluent monitoring, the reporting limits for the individual parameters shall be at or below the minimum levels (MLs) as stated in the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (2000) [also known as the State Implementation Policy (SIP)]; any revisions to the MLs shall be adhered to. If a parameter does not have a stated ML, then the Discharger shall conduct the analysis using the lowest commercially available and reasonably achievable detection levels.

The following report elements should be used to submit the influent and effluent monitoring results. A similarly structured format may be used but will be subject to Regional Water Board approval. The monitoring reports shall be submitted with the Pretreatment Annual Report identified in Appendix H-1.

1. Sampling Procedures, Sample Dechlorination, Sample Compositing, and Data Validation (applicable quality assurance/quality control) shall be performed in accordance with the techniques prescribed in 40 CFR 136 and amendments thereto. The Discharger shall make available upon request its sampling procedures including methods of dechlorination, compositing, and data validation.

2. A tabulation of the test results for the detected parameters shall be provided.

3. Discussion of Results – The report shall include a complete discussion of the test results for the detected parameters. If any pollutants are detected in sufficient concentration to upset, interfere or pass through plant operations, the type of pollutant(s) and potential source(s) shall be noted, along with a plan of action to control, eliminate, and/or monitor the pollutant(s). Any apparent generation and/or destruction of pollutants attributable to chlorination/dechlorination sampling and analysis practices shall be noted.

C. Biosolids Monitoring

Biosolids should be sampled in a manner that will be representative of the biosolids generated from the influent and effluent monitoring events except as noted in (3. below. The same parameters required for influent and effluent analysis shall be included in the biosolids analysis. The biosolids analyzed shall be a composite sample of the biosolids for final disposal consisting of:

1. Biosolids lagoons – 20 grab samples collected at representative equidistant intervals (grid pattern) and composited as a single grab, or

2. Dried stockpile – 20 grab samples collected at various representative locations and depths and composited as a single grab, or

3. Dewatered biosolids - daily composite of 4 representative grab samples each day for 5 days taken at equal intervals during the daily operating shift taken from a) the dewatering units or b) each truckload, and shall be combined into a single 5- day composite.

The U.S. EPA manual, POTW Sludge Sampling and Analysis Guidance Document, August 1989, containing detailed sampling protocols specific to biosolids is recommended as a guidance for sampling procedures. The U.S. EPA manual Analytical Methods of the National Sewage Sludge Survey, September 1990, containing detailed analytical protocols specific to biosolids, is recommended as a guidance for analytical methods.

In determining if the biosolids are a hazardous waste, the Discharger shall adhere to Article 2, "Criteria for Identifying the Characteristics of Hazardous Waste," and Article 3, "Characteristics of Hazardous Waste," of Title 22, California Code of Regulations, sections 66261.10 to 66261.24 and all amendments thereto.

The following report elements should be used to submit the biosolids monitoring results. A similarly structured form may be used but will be subject to Regional Water Board approval. The results shall be submitted with the Pretreatment Annual Report identified in Appendix H-1.

- Sampling Procedures and Data Validation (applicable quality assurance/quality control) shall be performed in accordance with the techniques prescribed in 40 CFR 136 and amendments thereto. The Discharger shall make available upon request its biosolids sampling procedures and data validation methods.

- Test Results – Tabulate the test results for the detected parameters and include the percent solids.

- Discussion of Results – Include a complete discussion of test results for the detected parameters. If the detected pollutant(s) is reasonably deemed to have an adverse effect on biosolids disposal, a plan of action to control, eliminate, and/or monitor the pollutant(s) and the known or potential source(s) shall be included. Any apparent generation and/or destruction of pollutants attributable to chlorination/dechlorination sampling and analysis practices shall be noted.

The Discharger shall also provide a summary table presenting any influent, effluent or biosolids monitoring data for non-priority pollutants that the Discharger believes may be causing or contributing to interference, pass through or adversely impacting biosolids quality.

EXHIBIT 7

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

OCT 0 2 2019

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Harlan Kelly, Jr.
General Manager
San Francisco Public Utilities Commission
525 Golden Gate Avenue
San Francisco, CA 94102

Re: Notice of Violation of National Pollutant Discharge Elimination System permits

Dear Mr. Kelly:

This letter serves to notify you that the EPA has identified Clean Water Act (CWA) violations of the City and County of San Francisco's (City's) National Pollutant Discharge Elimination System (NPDES) permits regulating discharges from the City's wastewater treatment plants, 36 combined sewer discharge (CSD) facilities and its combined sewer system. The permits in question are: (1) Waste Discharge Requirements for the City and County of San Francisco Oceanside Water Pollution Control Plant (Southwest Ocean Outfall) and Collection System, Including the Westside Wet Weather Facilities Order No. R2-2009-0062/NPDES No. CA0037681 (Oceanside Permit); and (2) Waste Discharge Requirements for the City and County of San Francisco Southeast Water Pollution Control Plant, North Point Wet Weather Facility, Bayside Wet Weather Facilities, and Wastewater Collection System Order No. R2-2013-0029/NPDES No. CA0037664 (Southeast Permit).

Historically, the City's data, which we also note are materially incomplete in numerous ways that likely masks the true nature and scope of certain violations, show it is discharging approximately one and a half billion gallons of combined sewage annually onto beaches and other sensitive areas, including areas where recreation takes place. Recent data show that the annual combined sewer discharges are closer to two billion gallons. The failure to properly operate and maintain the City's sewage collection and treatment facilities creates public health risks. For example, lack of proper operation and maintenance has caused force main and pump station failures that have diverted substantial volumes of raw and partially-treated sewage to flow across beaches and into the San Francisco Bay and the Pacific Ocean. There have been instances of sewage flowing in the streets and entering people's homes. Moreover, the City's data also show other pollutants of significant concern such as copper, zinc, lead, cyanide and ammonia that can threaten the water quality of the Bay and the ocean.

The City has violated and in many cases continues to violate the terms of its NPDES permits, including but not limited to the following:

1. Failure to properly operate and maintain its facilities including the associated collection systems as required by sections VI.C.4.c, VI.C.5.b.i.b, and Attachment D.I.D. of the

Southeast Permit and sections VI.C.4.a.1, VI.C.6.b.1.ii, and Attachment D.I.D. of the Oceanside Permit. For example, the City has not cleaned, repaired and replaced sewer pipes on a schedule to ensure they remain in proper working order, the City does not inspect all accessible CSD outfalls every year, and the City has not provided adequate back-up power at critical facilities. Also, Attachment G.I.I.2 of the Southeast and Oceanside Permits requires that "[c]ollection, treatment, storage, and disposal systems shall be operated in a manner that precludes public contact with wastewater, except in cases where excluding the public is infeasible, such as private property," and EPA has documented several incidents when public contact with wastewater occurred, evidencing that the systems are not being properly operated and maintained.

2. Failure to comply with wet weather operational requirements to maximize use of the collection system for storage and to maximize flows to treatment plants pursuant to sections VI.C.5.b.ii, VI.C.5.b.iv, and VI.C.5.c.iii of the Southeast Permit and sections VI.C.6.b.(2), VI.C.6.b.(4), and VI.C.6.c.(3) of the Oceanside Permit. For example, critical pumps were not activated in order to maximize storage and treatment that could have avoided or reduced sewage discharges, and which resulted in unpermitted discharges.

3. Failure to post warning signs when public contact with wastewater could reasonably occur as required by Attachment G.I.I.2 of both the Southeast and Oceanside permits. For example, the City has failed to post warning signs when excursions have occurred on public property.

4. Failure to comply with reporting and recordkeeping requirements related to releases or diversions of untreated or partially-treated sewage from the combined sewer system pursuant to sections VI.C.4.c.ii.(a), VI.C.4.c.ii.(b), and VI.C.4.c.ii.(c) of the Southeast Permit. For example, the City has not collected or provided all required information about such releases or diversions in the Excursion Annual Report and has not reported all applicable releases and diversions that have occurred. The City has also failed to report all applicable releases and diversions greater than 1,000 gallons to the Regional Water Board and Department of Public Health.

5. Failure to comply with CSD monitoring and reporting as required by section VI.B of both the Southeast and Oceanside permits. For example, the City failed to monitor for all required parameters, did not monitor at the required frequency and failed to use a data-driven analysis of the pollutant removal efficacy of CSD structures.

6. Failure to notify the public of CSDs as required by section VI.C.5.b.viii of the Southeast Permit and section VI.C.6.b.(8) of the Oceanside Permit. For example, signs have been obscured, posted in inconspicuous areas, or unreadable from a reasonable distance, and warning signs have not been posted as required.

7. Failure to comply with water quality standards as required by section V.C of the Southeast Permit. For example, combined sewer discharges have exceeded water quality standards for pH, heavy metals, and bacteria

The City must operate in full compliance with the requirements of the CWA, including its NPDES permits. The violations identified in this letter may result in liability for appropriate

injunctive relief pursuant to CWA Section 309(b), 33 U.S.C. § 1319(b), and statutory civil penalties under CWA Section 309(d), 33 U.S.C. § 1319(d), as modified by 40 C.F.R. Part 19. Please note that the EPA is coordinating with the California Regional Water Quality Control Board, San Francisco Bay Region, to ensure that timely and appropriate enforcement action is taken and compliance with the permits is achieved.

The EPA takes CWA violations at municipal treatment plants very seriously and has pursued vigorous enforcement actions against other municipalities within California as well as elsewhere in the nation. The EPA expects the City to share its concern for the protection of public health and surface water resources and expects the City to address its ongoing CWA violations with significant and meaningful measures to ensure a prompt return to full compliance.

The notice provided in this letter is not an election by the EPA to forgo any remedies available to it under the law, including without limit any administrative, civil or criminal action to seek penalties, fines, or other appropriate injunctive relief under the CWA, and specifically any authority under CWA sections 309 and 504, 33 U.S.C. §§ 1319 and 1364. The EPA reserves all available legal and equitable rights and remedies to enforce any violations identified in this letter, as well as any other violations not specifically identified herein.

Sincerely,

Michael Stoker
Regional Administrator

cc: Michael Montgomery
Executive Officer SFRWQCB

EXHIBIT 8

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

NOV 21 2019

Harlan L. Kelly, Jr.
General Manager
San Francisco Public Utilities Commission
525 Golden Gate Avenue, 13th Floor
San Francisco, California 94102

Dear Mr. Kelly:

Your Deputy General Manager, Michael Carlin, copied the U.S. Environmental Protection Agency's Office of Water on his September 9, 2019 letter to Michael Stoker, Region 9 Regional Administrator, on behalf of the San Francisco Public Utilities Commission (SFPUC) regarding the reissuance of the SFPUC Oceanside NPDES permit. The Oceanside permit was issued on October 1, 2009 and expired on September 30, 2014. It has been continued administratively since that date. In his letter, Mr. Carlin requested a delay in the adoption of the renewed permit to allow a path forward "that is consistent with the intent of the Combined Sewer Overflow (CSO) Policy, protects receiving water quality, and creates improved regulatory certainty for the benefit of all parties." Given the national policy and consistency issues raised in his letter, we are responding on behalf of Mr. Stoker. EPA Administrator Andrew Wheeler also has asked us to respond on his behalf to the October 1, 2019, letter that you sent to him. The analysis set forth below applies not only to the Oceanside Publicly Owned Treatment Plant (POTW), but also to the Southeast (Bayside) POTW, which similarly is operating under an expired permit that has been continued administratively.

In summary, the interpretation of the CSO Policy set forth in the SFPUC letters, as well as the objection to permit terms that require compliance with water quality standards (WQS), have been reviewed by the EPA at the Headquarters level because they raise national issues. As articulated below, your asserted positions are inconsistent with the approach taken with respect to CSO and water quality issues across the country. If adopted, the EPA would be holding the City and County of San Francisco to a different and much lower standard than other communities that are addressing CSO issues.

In the September 9 letter, the SFPUC objects to permit conditions that require compliance with WQS and states that such permit conditions would impose "unlimited liability risk." According to that letter, the SFPUC does not need to comply with WQS because, following implementation of a Long-Term Control Plan (LTCP), "all parties should be assured that water quality standards and beneficial uses are being protected." Such an assertion is a complete misstatement of the CSO Policy, which was incorporated by reference into the Clean Water Act (CWA) in 2000. *See* 59 Fed. Reg. 18,688 (Apr. 19, 1994); CWA section 402(q), 33 U.S.C. 1342(q).

The CSO Policy does not waive any CWA requirements. Rather, the CSO Policy provides guidance on the planning, selection, and implementation of CSO controls "that meet the requirements of the CWA." 59 Fed. Reg. at 18,688. The Policy establishes nine minimum controls that are the minimum technology-based requirements for CSO discharges. 59 Fed Reg. at 18,695. Water quality-based requirements "are to be established based on applicable water quality standards." *Id.*

To develop a LTCP to meet WQS, the Policy lays out two alternative approaches to evaluate CSO controls: the "presumption" approach and the "demonstration" approach. The City and County of San Francisco began constructing CSO controls before the issuance of the CSO Policy and completed those controls in 1997. However, the CSO Policy still applies. As stated in the Policy, "[i]f, after monitoring, it is determined that WQS are not being attained, the permittee should be required to submit a revised CSO control plan that, once implemented, will attain WQS." *Id.* at 18,690. Moreover, the Policy specifically states that preexisting CSO controls "should be reviewed and modified to be consistent with the sensitive area, financial capability, and post-construction monitoring provisions of this Policy." *Id.* For example, far from waiving WQS, the CSO Policy specifies that a permit must include a post-construction monitoring program that is sufficient "to demonstrate compliance with WQS and protection of designated uses as well as to determine the effectiveness of CSO controls." *Id.* at 18,696. Permits also must include "[a] reopener clause authorizing the NPDES authority to reopen and modify the permit upon determination that the CSO controls fail to meet WQS or protect designated uses." *Id.* The Policy also specifies that "[t]he selected controls should be designed to allow cost effective expansion or cost-effective retrofitting if additional controls are subsequently determined to be necessary to meet WQS, including existing and designated uses." 59 Fed. Reg. at 18,691.

The SFPUC's September 9 letter states that the collection system exceeds its "design objectives" and that SFPUC believes that the discharges are "consistent with applicable water quality standards." "Consistent with" standards is not the same as meeting standards and the CWA requires compliance with WQS. WQS, their applicability, and policies generally affecting their application and implementation (such as mixing zones) are all established by state law, subject to EPA approval. The EPA is well aware that since 1979, California has provided San Francisco with a variance from the bacteria standards applicable to the Oceanside POTW and even allows "floatables" (i.e., fecal matter and other organic and inorganic substances) in the water that can directly impact beaches with recreation impacts. The CWA requires that states review applicable WQS, including variances, at least every three years. 33 U.S.C. 1313(c)(1); 40 CFR 131.20(a). The EPA's WQS regulations also require that a variance longer than five years be reevaluated at least every five years. *See* 40 CFR 131.14(b)(v). EPA Headquarters' review of the history of the variance seems to indicate that there have been no attempts to update this variance since its initial implementation in 1979. The EPA notified California in writing on August 14, 2017 and again on August 12, 2019 that the variance must be reviewed to ensure compliance with the CWA and the EPA's WQS regulations. That review must take place and if California cannot demonstrate that this variance meets the requirements set forth in 40 CFR 131.14, it should remove the variance.

The September 9 letter also argues that the Pacific Ocean is not impaired, including for bacteria, and that the Basin Plan and the San Francisco Bay Bacteria Total Maximum Daily Load (TMDL) found that combined sewer discharges are not a significant source of bacteria to the receiving waters. The attainment status of the receiving water does not obviate the need for a CSO discharge to meet WQS. The CWA is designed to protect receiving waters that already meet WQS, as well as to restore waters that are impaired. Further, reliance on the San Francisco Bay Bacteria TMDL to create a presumption that the Oceanside plant is not a significant source of bacteria is inapposite. First, the Oceanside plant discharges were not analyzed under the San Francisco Bay Bacteria TMDL. Second, the State of California has given the Oceanside POTW a variance from bacteria and must comply with other WQS to the extent practical. Third, the prior Oceanside permits had even given SFPUC an exemption from monitoring for bacteria in effluent so the utility has no factual basis for quantifying its bacteria loading. Finally, as applied to the Southeast plant, the TMDL assumes compliance with the existing permit. That assumption has been seriously called into question by the October 2, 2019 Notice of Violation issued to the SFPUC by EPA Region 9.

In addition to requiring discharges to meet WQS, the CSO Policy requires that permits must include "[a] requirement to reassess overflows to sensitive areas in those cases where elimination or relocation of the overflows is not physically possible and economically achievable. The reassessment should be based on consideration of new or improved techniques to eliminate or relocate overflows or changed circumstances that influence economic achievability." 59 Fed. Reg. at 18,696. The SFPUC has combined sewer overflow outfalls that discharge into the Pacific Ocean at Ocean Beach (Discharge Point Nos. CSD-001, CSD-002, and CSD-003), China Beach (Discharge Point No. CSD-005), and Baker Beach (Discharge Point Nos. CSD-006 and CSD-007). These are popular recreation areas used by the community and tourists throughout the year. As noted in Region 9's comments on the draft Oceanside permit, SFPUC has conducted a study that suggests that elimination of CSOs in the typical year at Baker Beach and China Beach is achievable. *See Westside Drainage Basin Urban Watershed Technical Opportunities Technical Memorandum* (Feb. 2015). However, the SFPUC's permit would continue to authorize those outfalls as well as other outfalls that are near other beaches. Like most beaches, these sites are used for primary contact recreation and thus are considered sensitive areas under the CSO Policy. 59 Fed. Reg. at 18,692. To comply with the CSO Policy, the physical possibility and economic achievability of the elimination or relocation of CSOs that discharge to primary contact recreation beaches must be addressed. The fact that Baker Beach was formerly impaired and may now be meeting WQS, as noted in your October 1, 2019 letter, does not obviate the need to determine if these combined sewer discharges can be eliminated or relocated. The revised Oceanside permit appropriately requires SFPUC to evaluate that elimination or relocation. Further, the beaches on the Bayside remain impaired.

The October 1, 2019 SFPUC letter argues in favor of continuing to use the same controls developed in the 1970s to addressing combined sewer discharges. Upgrading publicly owned treatment works from primary to secondary treatment was a significant impetus for the 1972 amendments to the CWA. Since that time, the vast majority of cities have made enormous investments to meet the secondary treatment standard. While secondary treatment standards do not apply to CSOs, the CSO Policy, technology-based limits based on best available technology economically achievable and best conventional technology, and WQS do.[1] We all might agree that in 1994 San Francisco was ahead of the curve in addressing CSOs. However, after 25 years of implementing the CSO Policy, San Francisco is now far behind.

As discussed above, the CSO Policy requires compliance with water quality standards. The EPA's concerns regarding WQS exceedances are clearly identified in the October 2, 2019 Notice of Violation. The EPA is also concerned that the approach adopted by San Francisco in the 1970s, with its continued reliance on primary treatment, does not even meet the "presumption" approach under the CSO Policy.[2] Under the presumption approach a city may initially presume compliance with WQS by either reducing the number of CSO overflows each year to no more than four to six, by eliminating or capturing for treatment no less than 85% of the volume of the combined sewage collected, or by eliminating or removing the mass of pollutants causing water quality impairments. 59 Fed. Reg. at 18,692-93. SFPUC's system is designed to route 100% of the sewage that does not receive treatment at a POTW to storage/transport and diversion structures that are intended to provide equivalent to primary treatment before sending the sewage to the combined sewer discharge outfalls. These structures are equipped with baffles that are intended to retain "floatables" instead of flowing through the outfall. However, if the structures fill with water it is unclear whether they operate as designed. Further, after a rainfall event, it

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[1] *Montgomery Environmental Coalition v. Costle*, 646 F.2d 568, 592 (D.C. Cir. 1980).

[2] Under CSO Control Policy I.C.1 and 2, communities such as San Francisco that were already constructing or operating controls as of the date of the policy are not subject to the initial planning and construction provisions in the policy. "Such programs, however, should be reviewed and modified to be consistent with the sensitive area, financial capability, and post-construction monitoring provisions of this Policy." 59 Fed. Reg. at 18,690.

is unclear whether SFPUC cleans out the storage/transport structures to prevent "floatables" from the last storm from being discharged during the next storm. These operation and maintenance issues are among the subjects raised by the October 2, 2019 Notice of Violation.

Even if operated as designed, these structures do not constitute 85% "capture for treatment" that the CSO Policy identifies as an option for initially presuming WQS are met. Under the CSO Policy, capture for treatment means capture for *secondary* treatment. This is clear from the text of the Policy that requires that any combined sewer overflows *remaining after 85% is captured for treatment* receive at least *primary* clarification, i.e., treatment. 59 Fed. Reg. at 18,693. If "capture for treatment" meant primary treatment, this additional condition would have no meaning. Thus, the SFPUC's design for CSO treatment does not even warrant a presumption that WQS are met because it only achieves primary treatment. Of course, even if applicable, any presumption may be rebutted and the October 2, 2019 Notice of Violation rebuts that presumption.

The October 1, 2019 letter further argues that the SFPUC's combined sewer outfalls each discharge between one and 10 times a year. According to SFPUC's September 2017 Bayside System Efficacy Report, CSOs have occurred from discharge points CSD 009-043 an average of 17.6 times per year between 2012 and 2017, and according to SFPUC's September 2013 Monitoring Study to Effectively Characterize Overflow Impacts and Efficacy of CSD Controls for Oceanside, CSOs occurred from discharge points CSD 001-007 25 times in 2012-2013. SFPUC's own data show that the design and actual performance of San Francisco's combined sewer system exceed the four to six overflow events per year contemplated under the approach for presuming an adequate level of control to meet WQS under the CSO Policy. 59 Fed. Reg. at 18,692.

Finally, we need to address the claim in your October 1, 2019 letter that operational deficiencies by SFPUC "do not result in routine exposure to raw sewage." We would certainly hope that even when flooding occurs, basement backups are not "routine" for the residents of San Francisco. However, the fact that they exist may well be an indication that the City is not properly operating and maintaining its system. This issue also is a subject of the October 2, 2019 Notice of Violation.

These issues do not preclude reissuance of the Oceanside permit. However, they may prevent the SFPUC from being able to demonstrate compliance with the terms of both the Oceanside and Southeast permits immediately. Indeed, the October 2, 2019 Notice of Violation issued to the SFPUC by EPA Region 9 alleges that you are currently in violation of the terms of your expired 2009 Oceanside permit. The CSO Policy states that "[i]f compliance with the Phase II permit is not possible, an enforceable schedule, consistent with the Enforcement and Compliance Section of this policy, should be issued in conjunction with the Phase II permit which specifies the schedule and implementation of the long-term CSO control plan." *Id.* at 18,696. At present, we do not see how SFPUC can demonstrate compliance with WQS, its NPDES permits, or the CSO Policy in the near term. Accordingly, we strongly urge you to enter into such an enforceable agreement with the EPA.

Sincerely,

David P. Ross
Assistant Administrator
Office of Water

Susan Parker Bodine
Assistant Administrator
Office of Enforcement and Compliance Assurance

cc: John Roddy, Office of the San Francisco City Attorney
Tom Boehr, Hunton, Andrews, Kurth LLP
Sam Brown, Hunton, Andrews, Kurth LLP

EXHIBIT 9

Exhibit 9

SUMMARY OF RECENT CITY OF SAN FRANCISCO NPDES PERMIT VIOLATIONS

1. SOUTHEAST - Current Permit # ORDER No. R2-2013-0029

NPDES No. CA0037664

A	B	C	D
Date of Violation	**Description of Violation**	**Permit Term Violated**	**Date and Type of Document / Exhibit #**
2/8/14	Discharging un-dechlorinated treated water from southeast WPCP (Violation #1)	Section 3. a & c	2/13/14 5D (Ex. 1) 4/9/14 5DSup (Ex. 2) 4/15/14 CCSF (Ex. 2A) 6/10/14 VN (Ex. 3) 6/30/14 CCSF (Ex. 4) 10/22/14 CCSF (Ex. 5) 1 - Folder 001
2/8/14	Discharging untreated wastewater (Violation #2)	Section 3. a & c	2/13/14 5D (Ex. 1) 4/9/14 5DSup (Ex. 2) 6/10/14 VN (Ex. 3 above) 6/30/14 CCSF (Ex. 4 above) 10/22/14 CCSF (Ex. 5) 1 - Folder 001
2/28/14	Discharge of un-dechlorinated treated wastewater at discharge point No. 003 through No. 006	Section 3. a & c	3/5/14 5D (Ex. 6) 4/9/14 5DSup (Ex. 7) 6/10/14 VN (Ex. 3 above) 6/30/14 CCSF (Ex. 4 above) 2 - Folder 002
3/10/14	Discharge primary treated wastewater at discharge point No.001	Section 3. a & c	3/14/14 5D (Ex. 8) 4/09/14 5D (Ex. 8A) 6/10/14 VN (Ex. 3 above) 6/30/14 CCSF (Ex. 4 above) 3 - Folder 003
4/28/14	Unauthorized discharge due to grease blocking manhole water way		5/06/15 5D (Ex. 9) 5/06/15 CCSF (Ex. 10) 4 - Folder 004

EXHIBIT 9

5/14/14	Discharge secondary treated wastewater during dry weather to Islais creek discharge point.	Section 3. a & d	5/19/145D (Ex. 11) 5/15/14 CCSF (Ex. 11A) 6/10/14 VN (Ex. 3 above) 6/30/14 CCSF (Ex. 4 above) 5 - Folder 005
7/19/14	Unauthorized discharge with a positive chlorine residual	Section IV. A. 1. Table 6	7/24/14 5D (Ex. 12) 6 - Folder 027
10/17/14	Coliform bacterial counts not calculated as required. 1 permit violation since the last inspection. Not sufficiently dechlorinating discharge water		10/17/14 CEI (Ex. 13) 7 - Folder 006

2. SOUTHEAST - Previous Permit # ORDER No. R2-2002-0073 and

ORDER No. R2-2008-0007

NPDES No. CA0037664

Date of Violation	**Description of Violation**	**Permit Term Violated**	**Date and Type of Document / Exhibit #**
8/10/04	Unauthorized dry weather discharge due to power outage, insecure back-up power source, refrigeration of effluent not right temp	ORDER NO. R2-2002-0073 NPDES PERMIT NO. CAOO37664 Condition 10.e	9/14/04 CEI (Ex. 14) 1/14/05 CCSF (Ex. 15) 1 - Folder 009
12/6/14 and 12/7/14	Numerous deficiencies in CCSF's POTW pre-treatment program	Various Pretreatment Compliance Inspection Summary Report, see Sections 5.1, 5.2, 5.3, 6, 7,.1, 7.3, 7.4, 7.5, 8, 9, pp. (47)	2/16/05 PCI (Ex. 16) 3/04/05 CCSF (Ex. 17) 2 - Folder 033

11/17/05	CCSF facility using incorrect BOD (biochemical oxygen demand) values in their reporting. Three prohibited dry weather discharges to Islais creek noted since last inspection.		1/30/06 CEI (Ex. 18) 3/14/06 CCSF (Ex. 19) 3 - Folder 034
8/09/07	CCSF was not regulating SIU's and inspecting private companies before reissuing them a permit, not citing SIU's if they did violate their permit, many instances of non compliance	40 CFR 403.8(f)(l)(iii)(B)(4) 40 CFR 403.8(f)(2)(v) 40 CFR 403.8(f)(2)(iv)	8/09/07 PCA (Ex. 20) 9/20/07 CCSF (Ex. 21) 4 - Folder 014
5/8/08	Effluent exceedance of chlorine residual in the effluent reported since the last inspection.	Part B of Order No. R2-2002-0073	7/29/08 CEI (Ex. 22) 5 - Folder 035
6/26/2008	PCI report conducted indicates in the cover letter that the CCSF was not compliant. Water board specifically asks CCSF for a response regarding how they "plan to achieve compliance".		6/26/08 PCI cover (Ex. 23) 7/24/08 CCSF (Ex. 24) 6 - Folder 015
7/11/08	Discharge spill into Islais Creek as a result of PG&E power outage		7/14/08 5D (Ex. 25) 7/14/08 CCSF (Ex. 26) 7/14/08 CCSF H (Ex. 27) 7 - Folder 013
9/11/2008	Fecal coliform concentration exceedance caused five permit violations		1/28/09 AR (Ex. 28) 8 - Folder 037

12/16/08	Bacterial concentrations in the effluent was higher than the permit allowed.	Order No. R2-2008-0007, Provision IV.B.1.c,	11/5/2009 IP (Ex. 29) 1/28/09 AR (Ex. 28 above) 9 - Folder 012
1/15/09	The southeast WPCP was not adequately recording and reporting their data to the water board. The plant also discharged effluent that exceeded the permits concentration of fecal coliform bacteria. Lab work was not performed adequately with permit standards.	Order No. R2-2008-0007. Section 3a Section 3c. Section 2.d. Section 4g. Section 5a. Section 7.i. 40 CFR Part 136.	2/23/09 IP (Ex. 30) 4/8/09 CCSF (Ex. 31) 4/9/09 CCSF (Ex. 32) 10 - Folder 011
2/02/09	PCI cover letter from 2009 indicates CCSF no compliance due to inadequately regulating SIU's – 18 out of 30 SIU's were not inspected at all by CCSF.		7/29/09 PCI cover (Ex. 33) 11 - Folder 016
2/23/09	High copper concentrations in the influent to southeast WPCP	Section 8 Special Provisions Copper Action Plan	6/23/09 CCSF (Ex. 34) 12 - Folder 008
9/21/09	Enterococcus bacterial concentration exceedance in the effluent at discharge point 002.	Order No. R2-2008-0007, Provision IV.B.1.c,	11/05/09 CEI (Ex. 35) 13 - Folder 036
2/26/10	SIU's significant noncompliance on page 46 of 2009 AR. Summary of report also indicates 5 notices of violations against SUI's and 1 SUI with published noncompliance		3/26/10 AR (Ex. 36) 14 - Folder 038

10/13/10	CCSF not correctly reporting all overflow events or reporting them at all, not maintaining overflow structures as required by their permit and not keeping-up with general plant maintenance, not removing solids and floating materials prior to discharge	Order No. R2-2008-0007, Attachment D, Section D Order No. R2-2008-0007, Section V-Receiving Water Limitations, Item 7, (I) No. R2-2008-0007, V. Receiving Water	10/13/10 CEI (Ex. 37) 6/6/11 CCSF (Ex. 38) 12/20/11 CCSF (Ex. 39) 15 - Folder 017
12/14/11	The effluent from southeast WPCP did not pass the fish/organism test of 90 percent or more survival	No. R2-2008-0007, Section IV.A.1.f	2/8/12 CEI (Ex. 40) 16 - Folder 010
11/16/12	Enterococcus violation		5/30/14 CEI (Ex. 41) 17 - Folder 031
12/08 thru 12/12	Ten counts of Enterococcus bacterial concentration exceedances in the effluent at southeast WPCP between 2008-2012	Sections 13385(h) and 13385(i)	1/25/10 AR (Ex. 42) 1/31/11 AR (Ex. 43) 6/18/13 CCSF (Ex. 44) 7/23/13VN (Ex. 45) 7/23/13 W (Ex. 46) 18 - Folder 007

3. OCEANSIDE - Current Permit # ORDER No. R2-2009-0062

NPDES No. CA0037681

Date of Violation	Description of Violation	Permit Term Violated	Date and Type of Document / Exhibit #
7/21/14	Unauthorized discharge and operator error on 2 hour reporting requirement		7/30/14 5D (Ex. 47) 9/23/14 PP (Ex. 48) 1 - Folder 024
8/27/14	Unauthorized discharge		9/4/14 5D (Ex. 49) 9/23/14 PP (Ex. 50) 2- Folder 025
12/11/14	Unauthorized discharge		1/26/13 CCSF (Ex. 51) 12/11/14 2HR (Ex. 52) 12/18/14 5D (Ex. 53) 1/7/15 CCSF (Ex. 54) 1/13/15 CCSF (Ex. 55) 1/23/15 5D Sup (Ex. 56) 1/26/15 CCSF (Ex. 57) 1/28/15 CCSF (Ex. 58) 2/24/15 PP (Ex. 59) 3/30/15 CCSF (Ex. 60) 4/27/15 CCSF (Ex. 61) PP (Ex. 62) 3 - Folder 026
12/11/14	Manhole covers found displaced – possible resulting unauthorized discharge to Lake Merced		12/15/14 5D (Ex. 63) 12/23/ 14 CCSF (Ex. 64) 4 - Folder 030
6/10/15	Discharge of untreated sewage at Seacliff #1		6/11/15 CCSF (Ex. 65) 6/15/15 5D (Ex. 66) 5 - Folder 029

4. OCEANSIDE - Previous Permit # ORDER No. R2-2003-0073

NPDES No. CA 0037681

Date of Violation	Description of Violation	Permit Term Violated	Date and Type of Document / Exhibit #
12/06/04	Many deficiencies relate to CCSF regulation of SIU's and inadequate reporting and self-monitoring.	40 CFR 403.18 40 CFR 403.8(0(2) 40 CFR 403.8(0(1)(iii) 40 CFR 403.S(0(2)(v) 40 CFR 403.3(0(5)	2/16/05 PCI (Ex. 67) 3/4/15 CCSF (Ex. 68) 1 - Folder 019
11/13/06	Massive volume of untreated sewage and untreated storm water spilled onto the great highway and ocean beach over two days.	Section 13385(a) (2), Section 13385(a) (4) and Section 13323.	11/16/06 Email (Ex. 69) 11/20/06 CCSF (Ex. 70) 11/22/06 24H (Ex. 71) 12/22/06 CCSF (Ex. 72) 3/26/07 CCSF (Ex. 73) 3/26/07 VN (Ex. 74) 4/27/07 CCSF (Ex. 75) 6/20/07 W (Ex. 76) 7/11/07 Fine (Ex. 77) 3/24/11 CCSF (Ex. 78) 2 - Folder 018
2/5/08	2008 PCI cover letter indicates CCSF noncompliance.		2/26/08 PCI (Ex. 79) 3 - Folder 022

3/04/08	The CCSF was noncompliant due to inadequate reporting of CSO control efficacy study and overflow impacts data. Records of monitoring information deficient in multiple fields. Laboratory procedures to record maximum holding times for samples deficient and therefore noncompliant.	No. R2-2003-0073, Section F.4.i., 40 CFR §122.41 (j)(3), 40 CFR §136.3, Table II,	3/04/08 CEI (Ex. 80) 4 - Folder 021
1/14/09	Final report of the overflow impacts and CSO control efficacy study were not submitted to water board. Regulatory manager was absent on day of inspection, signature required. Influent and effluent data that was submitted was wrong.	Order No. R2-2003-0073, Section F.4.i.(C), Order No. R2-2003-0073, Provision F.13, 40CFR Part 122.41(j)(1)	2/23/09 IP (Ex. 81) 4/09/09 CCSF (Ex. 82) 5 - Folder 020
2/02/09	Annual Pretreatment report on page 39. Lists all instances of non compliance by SIU's in the 2008 year		2/02/09 APR (Ex. 83) 6 - Folder 038
3/16/12	Discharge spill during rainstorm due to PG&E power outage		3/23/12 CCSF (Ex. 84) 3/30/15 CCSF (Ex. 85) 7 - Folder 026
4/12/12	Storm water over flow		5/21/12 CCSF (Ex. 86) 5/21/12 CCSF (Ex. 87) 8 - Folder 028
11/21/12	Discharge due to manhole covering dislodging		11/26/12 CCSF (Ex. 88) 9 - Folder 023

Legend:

Abbreviations	Description
CEI	Compliant Evaluation Inspection Report
PCI	Pretreatment Inspection Report
IP	Inspection Report
VN	Violation Notices
AR	Annual Report
APR	Annual Pretreatment Report
5D	5-Day Incident Reports
5DSup	5-Day Supplemental Report
CCSF	City Response Correspondence
24H	24-Hour Reports
PP	Power Point
SIU's	Significant Industrial Users
W	Waiver of Right to a Hearing
CSO	Combined Sewer Overflows

EXHIBIT 10

Exhibit 10

All Instances of Non-Compliance of the Relevant NPDES Permits for the OSP

Previous Permit # CA0037681 (R2-2009-0062)

Date of Violation	Description of Violation	Permit Term Violated	Page Number of Exhibit 13
01/05/2016	Fort Funston Beach not posted or sampled following a CSD	Section VI.C.6.b.(8) & Section VI.B.MRP Section VIII	OSP0001 OSP0013, 21 OSP0070, 71
01/18/2016	Fort Funston not posted or sampled following a CSD	Section VI.C.6.b.(8) & Section VI.B.MRP Section VIII	OSP0001 OSP0013, 21 OSP0070, 71
01/18/2016	Baker Beach not posted or sampled following a CSD	Section VI.C.6.b.(8) & Section VI.B.MRP Section VIII	OSP0001 OSP0013, 21 OSP0070, 71
01/18/2016	Ocean beach posted 1-2 hours later than required	Section VI.C.6.b.(8)	OSP0001 OSP0013, 21 OSP0070, 71

Exhibit 10

All Instances of Non-Compliance of the Relevant NPDES Permits for the OSP

Previous Permit # CA0037681 (R2-2009-0062)

Date of Violation	Description of Violation	Permit Term Violated	Page Number of Exhibit 13
01/19/2016	Fort Funston Beach was posted and the public notified 4-5 hours later than required	Section VI.C.6.b.(8)	OSP0001 OSP0013, 21 OSP0070, 71
02/06/2016	Effluent on Ocean Beach SF CA Strong odor of sewage on Ocean Beach at an old sewer pipe at Vicente – emergency services were not available, meanwhile children are playing on the beach. Sewage overflowing into the street at Wawona and 46th for a week and complaints have been made but nothing has been done.	Section III.A. Order Conditions	OSP0002 OSP0009
03/09/2016	Chronic Toxicity Test invalidated due to poor control development	Section VI.B.MRP Section V.C.	OSP0029
03/12/2016	Illicit discharge from a private sewer lateral to a storm drain system "thought to be NPDES violation but later retracted" Reported in the MS4 Annual Report	Section III.A. Order Conditions	OSP0024 OSP0029 OSP0070, 71

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All Instances of Non-Compliance of the Relevant NPDES Permits for the OSP

Previous Permit # CA0037681 (R2-2009-0062)

Date of Violation	Description of Violation	Permit Term Violated	Page Number of Exhibit 13
10/17/2016 **Violation**	Unauthorized Discharge of 8011 gallons of combined stormwater & wastewater from CSD-007 **Violation ID#1022988**	Section III.A. Order Conditions **Corrective Action: None**	OSP0044 OSP0042 OSP0045 OSP0070, 71
12/11/2016	Following a CSD event, Lincoln was de-posted and not sampled due to a miscommunication about the CSD location and confusion about whether a discharge had occurred at Lincoln	Section VI.C.6.b.(8) & Section VI.B.MRP Section VIII	OSP0056 OSP0057, 67 OSP0070, 71
12/11/2016	Vicente posted and sampled one day late due to a miscommunication about the CSD location and confusion about whether a discharge had occurred at Lincoln	Section VI.C.6.b.(8) & Section VI.B.MRP Section VIII	OSP0056 OSP0057, 67 OSP0070, 71
12/23/2016	No beach posting or sampling occurred following a CSD at Vicente and Lincoln on 12/23/16 due to overflow sensor calibration issues.	Section VI.C.6.b.(8) & Section VI.B.MRP Section VIII	OSP0056 OSP0057, 67 OSP0070, 71

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All Instances of Non-Compliance of the Relevant NPDES Permits for the OSP

Previous Permit # CA0037681 (R2-2009-0062)

Date of Violation	Description of Violation	Permit Term Violated	Page Number of Exhibit 13
01/08/2017	Power interruption caused five lift pumps to be inactivated for 11 hours, causing 8.275MG discharged as CSDs through the Westside Transport system rather than through the SWOO	Section III.A. Order Conditions	OSP0092, 100 OSP0140, 141
01/10/2017	Beach posting for a discharge at the Seacliff 2 Pump Station occurred late due to miscommunication	Section VI.C.6.b.(8)	OSP0140, 141
02/07/2017	Sampling for CSD discharges at Vicente did not result in usable data due to unsterilized sample bottles	Section VI.B.MRP Section IV.B	OSP0140, 141
02/07/2017	Sampling for CSD discharges at Lincoln did not result in usable data due to unsterilized sample bottles	Section VI.B.MRP Section IV.B	OSP0140, 141
02/07/2017	Sampling for CSD discharges at Seacliff Pump Station did not result in usable data due to unsterilized sample bottles	Section VI.B.MRP Section IV.B	OSP0140, 141

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All Instances of Non-Compliance of the Relevant NPDES Permits for the OSP

Previous Permit # CA0037681 (R2-2009-0062)

Date of Violation	Description of Violation	Permit Term Violated	Page Number of Exhibit 13
03/23/2017 **Violation**	Unauthorized dry weather discharge occurred due to loss of power to the pump station at CSD-005 China Beach. Station was posted and sampled the next day, but not on the 23rd. Discharge occurred at 9:44PM. **Violation#1030362**	Section III.A. Order Conditions **Corrective Action: None**	OSP0104 OSP0106-8 OSP0140, 141
06/21/2017 **Violation**	Exceedance of weekly average BOD_5 @ 20 C° at 49mg/L. Possible presence of nitrifiers in the sample bottle and on the sampling tube biofilm. Limit in permit is 45 mg/L weekly average. Category 1 Pollutant (Effluent Violation for Group 1 Pollutant) **Violation#1030360**	Section IV.A.1.a. **Corrective Action:** Actions were taken to address the potential presence of nitrifiers in the sample bottle and on the sampling tube	OSP0121-2 OSP0140, 141
09/27/2017	Sample for this day for Table B pollutants in the ocean plan results not available for September SMR	Section VI.B. MRP Section XI.B.	OSP0131

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All Instances of Non-Compliance of the Relevant NPDES Permits for the OSP

Previous Permit # CA0037681 (R2-2009-0062)

Date of Violation	Description of Violation	Permit Term Violated	Page Number of Exhibit 13
01/08/2018	Valve (V3) between the East and West Transport Storage boxes did not respond to the Distributed Control System and was stuck in the open position. This allowed water to flow between the boxes, during which there were CSDs.	Section III.A. Order Conditions	OSP0161
01/22/2018	No access to China Beach site due to locked gate, no sampling or posting conducted	Section VI.C.6.b.(8) & Section VI.B.MRP Section VIII	OSP0139
03/17/2018 **Violation**	Exceedance of weekly TSS average. Total Suspended Solids (TSS) Weekly Average limit is 45 mg/L and reported value was 67 mg/L at EFF-001A. **Violation#1043973**	Section IV.A.1.a. **Corrective Action: None**	OSP0173-4 OSP0212, 213
04/06/2018	An AT&T communications interruptions with Sea Cliff 2 pump station (CSD-007) occurred prior to the rain event of April 6th. As a result, CSDs occurred on April 6th and April 7th: the staff could not record CSD end times, resulting in preventions of duration and volume estimations.	Section VI.B.MRP Section IV.B.2.	OSP0179 OSP0212, 213

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All Instances of Non-Compliance of the Relevant NPDES Permits for the OSP

Previous Permit # CA0037681 (R2-2009-0062)

Date of Violation	Description of Violation	Permit Term Violated	Page Number of Exhibit 13
04/06/2018	During the 4/6/18 CSD event, staff collected CSD samples at Monitoring Point EFF-CSD (located at Westside Pump Station). Sample volume was insufficient to perform all required analyses. Unable to analyze for oil & grease, pesticide & PCBs, and PAHs as identified in the NPDES permit.	Section VI.B. MRP Section IV.B.1.	OSP0179
04/17/2018 – 04/20/2018	Flow rate data for the final effluent not collected continuously due to data communication lines being relocated for the construction of the Westside Enhanced Water Recycling Project.	5/25/18 mSMR Folder 025	OSP0179
04/30/2018	Shoreline bacteriological report for this day was inadvertently omitted from the April 2019 SMR	Section VI.B.MRP Section XI.B.2.	OSP0184-5
09/12/2018	Final effluent (EFF-001A) sample for 5-day biochemical oxygen demand (BOD_5) did not meet quality assurance/quality control (QA/QC) specifications	Section VI.B.MRP Section V.C.	OSP0189 OSP0212, 213
10/03/2018	Plant shutdown prevented the collection of 24-hour representative composite samples for total suspended solids (TSS) for INF-001A and EFF-001	Section VI.B.MRP Section III. & Section VI.B.MRP Section IV.	OSP0194

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All Instances of Non-Compliance of the Relevant NPDES Permits for the OSP

Previous Permit # CA0037681 (R2-2009-0062)

Date of Violation	Description of Violation	Permit Term Violated	Page Number of Exhibit 13
10/05/2018	Plant shutdown prevented the collection of 24-hour representative composite samples for total suspended solids (TSS) for INF-001A and EFF-001	Section VI.B.MRP Section III. & Section VI.B.MRP Section IV.	OSP0194
10/06/2018	Plant shutdown prevented the collection of 24-hour representative composite samples for total suspended solids (TSS) for INF-001A and EFF-001	Section VI.B.MRP Section III. & Section VI.B.MRP Section IV.	OSP0194
10/24/2018	Final effluent (EFF-001A) sample for 5-day biochemical oxygen demand (BOD_5) did not meet quality assurance/quality control (QA/QC) specifications	Section VI.B.MRP Section V.C.	OSP0194
11/21/2018	Failure to notify on-call biologist after a 14 minute CSD at CSD-001 (Fort Funston). As a result, required beach sampling and public notification did not occur	Section VI.C.6.b.(8) & Section VI.B.MRP Section VIII	OSP0200, 201 OSP0212, 213

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All Instances of Non-Compliance of the Relevant NPDES Permits for the OSP

Previous Permit # CA0037681 (R2-2009-0062)

Date of Violation	Description of Violation	Permit Term Violated	Page Number of Exhibit 13
11/22/2018	Sample at EFF-CSD was not analyzed for BOD because the hold time for BOD analysis was exceeded due to Thanksgiving holiday.	Section VI.B.MRP Section IV.B.	OSP0200, 201 OSP0212, 214
11/24/2018 **Violation**	Exceedance of weekly average TSS of 55mg/L at EFF-001A. Total Suspended Solids (TSS) Weekly Average limit is 45 mg/L Category 1 Pollutant (Effluent Violation for Group 1 Pollutant) **Violation #1054392**	Section IV.A.1.a. **Corrective Action: None**	OSP0199 OSP0200 OSP0212, 213 OSP0228
11/29/2018	Sample volume from EFF-CSD was insufficient for analyses other than BOD_5, pH, and inorganic Table 1 pollutants due to the short CSD	Section VI.B. MRP Section IV.B.	OSP0200, 201
12/24/2018 – 12/31/2018	Shoreline monitoring and posting not conducted at China Beach because it was not accessible due to a locked fate due to partial government shutdown.	Section VI.C.6.b.(8) & Section VI.B.MRP Section VIII	OSP0206-7, 206, 208 OSP0212, 214

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All Instances of Non-Compliance of the Relevant NPDES Permits for the OSP

Previous Permit # CA0037681 (R2-2009-0062)

Date of Violation	Description of Violation	Permit Term Violated	Page Number of Exhibit 13
01/01/2019 – 01/22/2019	Lack of shoreline monitoring and posting at SRF-17 (China Beach) and SRF-22 (Fort Funston) due to inaccessibility from partial government shutdown (locked gate).	Section VI.C.6.b.(8) & Section VI.B.MRP Section VIII	OSP0223 OSP0240, 242 OSP0288, 291
01/06/2019	Lack of CSD sample. Insufficient sample volume was collected during the 1/6/19 CSD event due to issues with sampler programming	Section.VI. B.MRP Section IV.B	OSP0240, 242 OSP0288, 291
01/16/2019	Power outage causing inconsistent flows from the watershed to the Richmond Transport/Storage Tunnel. This caused a larger volume CSD at Seacliff #2 and less discharge to ongoing CSDs to Ocean beach	Section III.A. & Section VI.C.6.b.(4)	OSP0240, 241
01/23/2019	Final effluent sample from EFF-001A for BOD_5 did not meet QA/QC specifications.	Section VI.B. MRP Section V.C.3.	OSP0240 OSP0288, 291

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All Instances of Non-Compliance of the Relevant NPDES Permits for the OSP

Previous Permit # CA0037681 (R2-2009-0062)

Date of Violation	Description of Violation	Permit Term Violated	Page Number of Exhibit 13
01/25/2019 **Violation**	Unauthorized discharge of untreated wastewater combined with secondary treated effluent were discharged at EFF-001 due to equipment failure **Violation #1064928**	Section III.A. Order conditions **Corrective Action:** Secondary bypass drain valve was closed. Dewatering pump returned to service to prevent high sump level. Updated standing orders and procedures to ensure valve remains closed during dewatering	OSP0222 OSP0224 OSP0235 OSP0240 OSP0288, 290
01/29/2019	Unauthorized discharge of untreated wastewater combined with secondary treated effluent were discharged at EFF-001 due to equipment failure	Section III.A. Order conditions	OSP0224 OSP0235 OSP0240 OSP0288, 290
02/02/2019	Beach postings delayed a few hours at Baker Beach.	Section VI.C.6.b.(8)	OSP0234

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All Instances of Non-Compliance of the Relevant NPDES Permits for the OSP

Previous Permit # CA0037681 (R2-2009-0062)

Date of Violation	Description of Violation	Permit Term Violated	Page Number of Exhibit 13
03/13/2019	BOD_5 results for INF-001A and EFF-001A samples did not meet the BOD method SM5210B specification of a minimum dissolved oxygen depletion of 2.0 mg/L for the seed banks. This violation is 1 of 2 QA/QC specifications that were not met for these samples on this day	Section VI.B. MRP Section V.C.3.	OSP0246 OSP0288, 291
03/13/2019	BOD_5 results for INF-001A and EFF-001A samples did not meet the BOD method SM5210B specification of a maximum dissolved oxygen depletion of .20 mg/L for the dilution water blanks. This violation is 2 of 2 QA/QC specifications that were not met for these samples on this day	Section VI.B. MRP Section V.C.3.	OSP0246 OSP0288, 291
07/07/2019 – 07/13/2019	BOD_5 results for INF-001 and EFF-001A samples did not meet the BOD method SM5210B specification of a maximum dissolved oxygen depletion of .20 mg/L for the dilution water blanks.	Section VI.B. MRP Section III. & Section VI.B. MRP Section IV.	OSP0253 OSP0288, 291
07/28/2019 – 08/03/2019	Only four INF-001 samples were collected this week for pH due to unplanned plant shutdown on July 29-30, necessitated by a PG&E issue, prevented the collection of grab samples on those days. The permit requires 5/week minimum monitoring	Section VI.B. MRP Section III.	OSP0253, 254 OSP0288, 291

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All Instances of Non-Compliance of the Relevant NPDES Permits for the OSP

Previous Permit # CA0037681 (R2-2009-0062)

Date of Violation	Description of Violation	Permit Term Violated	Page Number of Exhibit 13
07/28/2019 – 08/03/2019	Only four INF-001 samples were collected this week for TSS due to unplanned plant shutdown on July 29-30, necessitated by a PG&E issue, prevented the collection of composite samples on those days, and a sampler setup issue prevented collection of a sample on July 31st. The permit requires 5/week minimum monitoring frequency.	Section VI.B. MRP Section III.	OSP0253, 254 OSP0288, 291
08/02/2019	For dry weather compliance monitoring, incomplete composite samples were collected for monitoring locations INF-001A and EFF-001Adue to plant shutdowns. Only TSS could be calculated.	Section IV.A. & Section VI.B. MRP Section III	OSP0258
08/17/2019	Unauthorized discharge of an estimate 1.8 MG of primary treated wastewater bypassed secondary treatment facilities and discharged through Discharge Point 001 for 13 hours due to equipment and programming failure.	Section III.A. Order conditions	OSP0251 OSP0258, 259 OSP0288, 290
08/17/2019	For dry weather compliance monitoring, incomplete composite samples were collected for monitoring locations INF-001A and EFF-001Adue to plant shutdowns. Only TSS could be calculated.	Section IV.A. & Section VI.B. MRP Section III	OSP0258

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All Instances of Non-Compliance of the Relevant NPDES Permits for the OSP

Previous Permit # CA0037681 (R2-2009-0062)

Date of Violation	Description of Violation	Permit Term Violated	Page Number of Exhibit 13
08/18/2019	For dry weather compliance monitoring, incomplete composite samples were collected for monitoring locations INF-001A and EFF-001Adue to plant shutdowns. Only TSS could be calculated.	Section IV.A. & Section VI.B. MRP Section III	OSP0258
08/18/2019 – 08/24/2019	Results for BOD_5 during this week are not available because the samples collected on 8/21/19 from INF-001 and EFF-001A did not meet a QA/QC specification for method SM5210B	Section VI.B. MRP Section III	OSP0258 OSP0288, 291
08/30/2019	For dry weather compliance monitoring, incomplete composite samples were collected for monitoring locations INF-001A and EFF-001Adue to plant shutdowns. Only TSS could be calculated.	Section 4.A.1.a. MRP Section 3 & Section 4.A.	OSP0258
09/06/2019	Dry weather compliance monitoring was not completed as required as incomplete composite samples were taken from locations INF-001A and EFF-001A due to plant shutdowns	Section IV.A. & Section VI.B. MRP Section III	OSP0263

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All Instances of Non-Compliance of the Relevant NPDES Permits for the OSP

Previous Permit # CA0037681 (R2-2009-0062)

Date of Violation	Description of Violation	Permit Term Violated	Page Number of Exhibit 13
09/11/2019	Dry weather compliance monitoring was not completed as required as incomplete composite samples were taken from locations INF-001A and EFF-001A due to plant shutdowns	Section IV.A. & Section VI.B. MRP Section III	OSP0263
09/14/2019	Dry weather compliance monitoring was not completed as required as incomplete composite samples were taken from locations INF-001A and EFF-001A due to plant shutdowns	Section IV.A. & Section VI.B. MRP Section III	OSP0263
09/15/2019	Dry weather compliance monitoring was not completed as required as incomplete composite samples were taken from locations INF-001A and EFF-001A due to plant shutdowns	Section IV.A. & Section VI.B. MRP Section III	OSP0263
10/13/2019 – 10/19/2019	Weekly BOD_5 results not available for this week due to test result not meeting QA/QC specification due to laboratory analyst error.	Section VI.B. MRP Section IV.A.	OSP0269 OSP0288, 291

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All Instances of Non-Compliance of the Relevant NPDES Permits for the OSP

Previous Permit # CA0037681 (R2-2009-0062)

Date of Violation	Description of Violation	Permit Term Violated	Page Number of Exhibit 13
10/21/2019	24 hour composite collection for location INF-001A and EFF-001A were incomplete due to plant shutdown	Section VI.B. MRP Section III & Section VI.B. MRP Section IV	OSP0268 OSP0269
11/26/2019 **Violation**	Did not meet wet weather plant requirements as EFF-001 only reached 134 MGD before discharging at CED-002 & CSD-003 due to an electrical issue. The requirement is 165 MGD flow rate before discharging at these locations **Violation#1068871**	Section VI.C.6.c.(3).(ii). **Corrective Action:** Investigation revealed an issue with two main disconnect switches left in "neutral" position--fixed issue and added routine maintenance check to prevent this issue from occurring again	OSP0274 OSP0276, 277

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All Instances of Non-Compliance of the Relevant NPDES Permits for the OSP

Previous Permit # CA0037681 (R2-2009-0062)

Date of Violation	Description of Violation	Permit Term Violated	Page Number of Exhibit 13
11/27/2019	Shoreline sampling did not occur at SRF-22 (Fort Funston) because of heavy surf..	Section VI.B.MRP Section VIII	OSP0275-6, 275, 277 OSP0288, 291
11/28/2019	Shoreline sampling and posting did not occur at SFR-21 (OB @ Vicente) because preliminary results from 11/27/19 indicated low concentrations for all three fecal indicator bacteria. Because of testing times (18-24 hours), the SFPUC found out later (afternoon of 11/28) that the 11/27 sample final result did indeed have an exceedance of enterococcus. In the end, this location should have been posted and sampled on 11/28/19 but it was not.	Section VI.C.6.b.(8) & Section VI.B.MRP Section VIII	OSP0275-6, 275, 277 OSP0288, 291
12/18/2019	Shoreline monitoring and posting were not conducted after a CSD at CSD-005 (Seacliff 1/China Beach) because the on-call biologist were not notified due to the CSD not being detected and therefore a lack of notification. The water elevation trigger was slightly greater than the actual surveyed level.	Section VI.C.6.b.(8) & Section VI.B.MRP Section VIII	OSP0282-3, 282, 284 OSP0288, 291

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All Instances of Non-Compliance of the Relevant NPDES Permits for the OSP

Previous Permit # CA0037681 (R2-2009-0062)

Date of Violation	Description of Violation	Permit Term Violated	Page Number of Exhibit 13
12/07/2019	China Beach, Ocean Beach and Ft. Funston (7 different sampling locations) were not sampled due to safety reasons being listed as too dark to continue sampling Not mentioned in mSMR	Section VI.B.MRP Section VIII	OSP0282
12/29/2019	Very high bacterial exceedances for all three criterion at SRF – 22 (Ft. Funston), which was not posted due to a locked gate.	Section VI.B.MRP Section VIII	OSP0282

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All Instances of Non-Compliance of the Relevant NPDES Permits for the OSP

Current Permit # CA0037681 (R2-2019-0028)

Date of Violation	Description of Violation	Permit Term Violated	Page Number of Exhibit 13
04/06/2020 **Violation**	Did not comply with wet weather plant operational requirements, as described in Provision VI.C.5.c.iv(b). INF-001 did not reach 60 MGD prior to initiating discharge from the Westside Transport/Storage Structure to Discharge Point No. 001. **Violation ID#1076485**	Section VI.C.5.c.iv.(b) **Corrective Action:** Follow-up training with staff is planned.	OSP0308-9, 308, 310
05/24/2020 – 05/30/2020	The BOD_5 results during this week are not available due to samples not meeting multiple QC specifications. 5/26 sample did not meet a maximum DO depletion of 0.20 mg/L for the dilution water blanks.	Section IV.A.1. & Section IV.A.1. MRP Section IV. A. 1.	OSP0315
05/24/2020 – 05/30/2020	The BOD_5 results during this week are not available due to samples not meeting multiple QC specifications. 5/27 sample did not meet a maximum DO depletion of 0.20 mg/L for the dilution water blanks and did not meet an average standard recovery of 72% outside of the acceptable QC range of	Section IV.A.1. & Section IV.A.1. MRP Section IV. A. 1.	OSP0315
06/24/2020	Incomplete 24-hr composite sample taken due to plant shutdown	Section IV.A.1. MRP Section IV. A. 1.	OSP0320

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EXHIBIT 11

Exhibit 11

All Instances of Non-Compliance of the NPDES Permit for the SEP

Current Permit # CA0037664

Date of Violation	Description of Violation	Permit Term Violated	Page Number of Exhibit 14
01/06/2016	Public notification and sampling did not occur at Crissy Field and Aquatic Park beach following a CSD at DP 009	Section VI.B. MRP Section VI.B & Section VI.c.5.b.viii	SEP0006a, 6b SEP0032, 33
01/18/2016	Public notification and sampling did not occur at Crissy Field and Aquatic Park beach following a CSD at DP 009, 010, & 015	Section VI.B. MRP Section VI.B & Section VI.c.5.b.viii	SEP0006a, 6b SEP0032, 33
01/18/2016	Public notification did not occur at Jackrabbit Beach following a CSD at DP 041	Section VI.B. MRP Section VI.B & Section VI.c.5.b.viii	SEP0006a, 6b SEP0032, 33

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All Instances of Non-Compliance of the NPDES Permit for the SEP

Current Permit # CA0037664

Date of Violation	Description of Violation	Permit Term Violated	Page Number of Exhibit 14
01/2016 - 07/2016 Every month	Effluent did not meet acute toxicity 11-sample 90th percentile requirement during January 2016 due to the test result of 60% reported during the November 2015 test. Test result in February 2016 of 65% caused average to continue to be lower than the requirement in March, April, May, June, and July 2016	Section IV.A.4. b.	SEP0032, 33
02/08/2016 **Violation**	Violation type: Acute Toxicity Description: Acute Toxicity 11 sample 90th percentile limit is 70% survival and reported value was 45% survival at EFF-001A **Violation #1006953**	Section IV.A.4.b. **Corrective Action: None**	SEP0001 SEP0005 SEP0010
02/08/2016 **Violation**	Violation type: Acute Toxicity Description: Acute Toxicity 11 sample median limit is 90% effluent and reported value was 85% effluent at EFF-001A **Violation #1006955**	Section IV.A.4.a. **Corrective Action: None**	SEP0001 SEP0005 SEP0010
02/22/2016 **Violation**	Violation type: Acute Toxicity Description: Acute Toxicity 11 sample median limit is 90% effluent and reported value was 85% effluent at EFF-001A **Violation #1006956**	Section IV.A.4.a. **Corrective Action: None**	SEP0001-5 SEP0010

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All Instances of Non-Compliance of the NPDES Permit for the SEP

Current Permit # CA0037664

Date of Violation	Description of Violation	Permit Term Violated	Page Number of Exhibit 14
03/05/2016 **Violation**	Unauthorized Discharge at DP 029 due to equipment failure **Violation #1013155**	Section III.D. **Corrective Action: None**	SEP0007 SEP0011 SEP0015 SEP0032, 34
03/15/2016	Elevated or exceeding mercury levels in the effluent	Attachment F Section II.C.	SEP0015 SEP0032, 34
03/22/2016	Invalid bioassay acute toxicity test due to wet weather	Section IV.A.4.a.	SEP0015 SEP0032
04/04/2016 & 04/19/2016 04/30/2016 (month)	Issues with acute toxicity testing – one acute toxicity flow through bioassay test was 90% final survival, two additional tests were invalid due to wet weather, A non-compliance chronic kelp sporophyll test conducted 4/19 - 4/21 which was invalidated b/c did not meet acceptability criteria. Whole month of April did not meet 11-sample 90th percentile requirement	Section IV.A.4.b.	SEP0012-14 SEP0017 SEP0032
05/20/2016 (month)	Did not meet 11-sample 90th percentile and 11-sample median acute toxicity requirement	Section IV.A.4.b.	SEP0032

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All Instances of Non-Compliance of the NPDES Permit for the SEP

Current Permit # CA0037664

Date of Violation	Description of Violation	Permit Term Violated	Page Number of Exhibit 14
06/20/2016 **Violation**	Discharge pipeline leak at DP 001 did not meet a dilution of at least 231:1 **Violation ID#1013159**	Section III.B. **Corrective Action: None**	SEP0018 SEP0021 SEP0023 SEP0032, 34
06/30/22016 (month)	Did not meet 11-sample 90th percentile and 11-sample median acute toxicity requirement	Section IV.A.4.b.	SEP0032
07/31/2016 (month) **Violation**	Monthly TSS (total suspended solids) exceedance in effluent **Violation ID#1013158**	Section IV.A.1 **Corrective Action: None**	SEP0022 SEP0024 SEP0032, 34
07/30/2016 Month)	Did not meet 11-sample 90th percentile and 11-sample median acute toxicity requirement	Section IV.A.4.b.	SEP0032, 34
10/17/2016	Bypass at SEP	Section III.C.	SEP0026 SEP0032, 34
10/20/2016	Category 3 SSO due to broken sever line	Section III.F. & Section VI.C.4.c.i.	SEP0026 SEP0032, 34

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All Instances of Non-Compliance of the NPDES Permit for the SEP

Current Permit # CA0037664

Date of Violation	Description of Violation	Permit Term Violated	Page Number of Exhibit 14
11/23/2016	Plant unable to maintain secondary treatment due to power outage at plant during a wet weather event	Section III.A. Order Conditions	SEP0028 SEP0031-2, 31, 34
01/08/2017	Public notification and sampling did not occur following CSDs in the North Shore area	Section VI.B. MRP Section VI.B. & Section VI.c.5.b.viii.	SEP0095, 96 SEP0006c, 6d
01/10/2017	Unauthorized discharge due to power outage at plant CSD – 029	Section III.D.	SEP0095, 96
01/20/2017	Insufficient influent flow levels due to equipment failure at North Point	Section VI.C.5.b.iv.	SEP0095, 96
01/20/2017	Insufficient influent flow levels due to equipment failure at Griffith pump station	Section VI.C.5.b.iv.	SEP0095, 97
01/30/2017 (month)	Exceedance of oil & grease average monthly limit in the effluent	Section IV.A.1.	SEP0095, 97

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All Instances of Non-Compliance of the NPDES Permit for the SEP

Current Permit # CA0037664

Date of Violation	Description of Violation	Permit Term Violated	Page Number of Exhibit 14
January 2017	January mSMR missing in CIWQS database	Section VI.B. MRP Section VIII.B.	Not in CIWQS database No Evidence File Folder
02/21/2017 **Violation**	Unauthorized discharge due to equipment failure **Violation ID#1043568**	Section III.A. Order Conditions **Corrective Action: None**	SEP0054 SEP0060 SEP0095, 97
03/31/2017 **Violation**	Exceedance of oil & grease average monthly limit in the effluent. Monthly average should be 10 mg/L and reported value was 14 mg/L Violation type: Category 1 Pollutant (Effluent Violation for Group 1 Pollutant **Violation ID#1033302**	Section IV.A.1. **Corrective Action:** In its cover letter, the Discharger stated that it would increase sampling frequency; however, it only collected the one required monthly sample in the following	SEP0061 SEP0070 SEP0095, 97
04/04/2017	Unauthorized discharge due to equipment failure	Section III.A. Order Conditions	SEP0066 SEP0073 SEP0095, 97

Exhibit 11

All Instances of Non-Compliance of the NPDES Permit for the SEP

Current Permit # CA0037664

Date of Violation	Description of Violation	Permit Term Violated	Page Number of Exhibit 14
04/12/2017 **Violation**	Unauthorized discharge due to equipment failure (EFF 001) Violation Type: Order Conditions **Violation #1043584**	Section III.A. Order Conditions **Corrective Action: None**	SEP0068 SEP0071 SEP0073 SEP0095, 97
04/30/2017 (month)	Acute Toxicity flow-through bioassay test results in 50% final survival	Section IV.A.4.	SEP0063-5 SEP0073
05/31/2017 (month)	Effluent did not meet acute toxicity limitation	Section IV.A.4.b.	SEP0072 SEP0074 SEP0095, 98
September 2017	September mSMR missing in CIWQS database	Section VI.B. MRP Section VIII.B.	Not in CIWQS database No Evidence File Folder

Exhibit 11

All Instances of Non-Compliance of the NPDES Permit for the SEP

Current Permit # CA0037664

Date of Violation	Description of Violation	Permit Term Violated	Page Number of Exhibit 14
10/11/2017 **Violation**	Power outage causing unauthorized un-dechlorinated discharge at (EFF 002) **Violation #1043955**	Section III.A. Order Conditions **Corrective Action:** Bisulfite dosing was increased immediately. SFPUC reported that it will install a backup power generator to increase power reliability within 60 days.	SEP0075 SEP0082 SEP0086 SEP0095, 97
10/20/2017 **Violation**	Power outage causing fully treated chlorinated and dechlorinated effluent unauthorized discharge 5 -day report not conducted within 5 days **Violation# 1043956**	Section III.A. Order Conditions **Corrective action:** In 2020, SFPUC plans to install a backup power generator to power the valve (V-20) that will prevent discharge should the Booster Pump Station lose power again in the future.	SEP0079 SEP0082 SEP0086 SEP0095, 98
11/27/2017 **Violation**	Effluent did not meet acute toxicity limitation. Acute Toxicity 11 Sample 90th Percentile limit is 70 % survival and reported value was 50 % survival at EFF-001A. Violation type: acute toxicity **Violation # 1043827**	Section IV.A.4.b **Corrective Action:** **None**	SEP00083-5 SEP0087 SEP0089 SEP0095, 98

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All Instances of Non-Compliance of the NPDES Permit for the SEP

Current Permit # CA0037664

Date of Violation	Description of Violation	Permit Term Violated	Page Number of Exhibit 14
12/04/2017 **Violation**	Effluent did not meet acute toxicity limitation: 11-sample 90th percentile limit is 70% survival – reported was 50% at EFF-001A **Violation #1043828**	Section IV.A.4.b **Corrective Action: None**	SEP0088 SEP0094 SEP0094-5, 94, 98
01/31/2018 (month)	11-sample 90th percentile for January 2018 was not met due to results from May, November, December 2017.	Section IV.A.4.b	SEP0092-3 SEP0112
02/12/2018 **Violation**	Effluent did not meet acute toxicity limitation: 11 Sample 90th Percentile limit is 70 % survival and reported value was 45 % survival at EFF-001A. **Violation ID#1043959** Acute Toxicity 11-Sample Median limit is 90 % survival and reported value was 85 % survival at EFF-001A. **Violation ID#1043958**	Section IV.A.4.b **Corrective Action: None**	SEP0091 SEP0110-1 SEP0124 SEP0214, 216
03/05/2018	Effluent did not meet acute toxicity limitation. 11 sample median and 90th percentile permit requirements not met in March 2018 due to acute flow through test results from August, November & December 2017 and February and March 2018.	Section IV.A.4.b	SEP0119 SEP0132-3 SEP0214, 216

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All Instances of Non-Compliance of the NPDES Permit for the SEP

Current Permit # CA0037664

Date of Violation	Description of Violation	Permit Term Violated	Page Number of Exhibit 14
03/13/2018	Unauthorized discharge due to personnel failure at EFF-002	Section III.A.	SEP0120 SEP 0133 SEP0214, 217
04/06/2018	Lack of field effluent sampling due to equipment failure	Section IV.A.1.	SEP0142 SEP0214, 217
04/07/2018	Delayed shoreline sampling due to flooded roads	Section VI.B. MRP Section VI.B.	SEP 0142 SEP0214, 217
04/30/2018 (month)	The 11-sample median and 90th percentile permit requirements for SEP were not met in April 2018 due to the acute flowthrough test results from November and December 2017; and February and March 2018.	Section IV.A.4.b	SEP0142
05/07/2018 **Violation**	Effluent did not meet the 11-sample median and 90th percentile acute toxicity limitations due to the acute flow-through test results from December 2017, and February & March 2018 **Violation ID#1048822** **&** **Violation ID#1048824**	Section IV.A.4.b **Corrective Action: None**	SEP0141 SEP0150 SEP0152 SEP0159 SEP0214, 216

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All Instances of Non-Compliance of the NPDES Permit for the SEP

Current Permit # CA0037664

Date of Violation	Description of Violation	Permit Term Violated	Page Number of Exhibit 14
06/18/2018	Effluent did not meet acute toxicity limitation	Section IV.A.4.b	SEP0151 SEP0160 SEP0214, 216
07/25/2018	pH data not taken for 5 days during this week as a result of plant shutdown	Section VI.B. MRP Section IV.A.	SEP0168 SEP0214, 216
10/18/2018 **Violation**	Unauthorized chlorinated and dechlorinated discharge due to equipment failure **Violation ID# 1054349**	Section III.A. Order Conditions **Corrective Action:** A temporary bypass is expected to be completed by February 2019. A rehabilitation and replacement project for both of the force mains is expected to be completed in the long-term. The SMR cover letter states that the project completion date	SEP0175 SEP0179 SEP0182 SEP0214, 217
11/5/2018 **Violation**	Effluent did not meet acute toxicity limitation. Acute Toxicity 11 Sample 90th Percentile limit is 70 % survival and reported value was 45 % survival at EFF-001A. **Violation ID#1066833**	Section IV.A.4.b **Corrective Action: None**	SEP0180-1 SEP0190 SEP0192 SEP0214, 216

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All Instances of Non-Compliance of the NPDES Permit for the SEP

Current Permit # CA0037664

Date of Violation	Description of Violation	Permit Term Violated	Page Number of Exhibit 14
11/22/2018	Lack of field effluent sampling due to staff on vacation	Section IV.B.	SEP0192 SEP0214
11/30/2018	Failure to conduct shoreline sampling after a CSD event due to faulty data collection	Section IV.B.	SEP0192, 194 SEP0214, 217
12/10/2018 **Violation**	Effluent did not meet acute toxicity limitation. 11-sample 90th percentile limit is 70%, reported 55% **Violation ID#1066834**	Section IV.A.4.b **Corrective Action: None**	SEP0191 SEP0202 SEP0204 SEP0214, 216
12/16/2018	During a storm event, Griffith Pump Station (GFS) did not maintain peak flow rate due to staff manually controlling flow rate rather than automation	Section VI.C.5.b.iv.	SEP0204, 206
12/24/2018 – 12/31/2018	Failure to conduct shoreline sampling and posting at E-210.1 due to partial government shutdown	Section VI.B. MRP Section VI.B & Section VI.c.5.b.viii	SEP0203-4, 203, 207 SEP0214, 218

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All Instances of Non-Compliance of the NPDES Permit for the SEP

Current Permit # CA0037664

Date of Violation	Description of Violation	Permit Term Violated	Page Number of Exhibit 14
12/30/2018 – 01/5/2019	Faulty QA/QC of BOD_5 analysis due to laboratory analyst error	Section VI.B. MRP Section IV.B.1.	SEP0229, 230 SEP0325, 329
01/01/2019 – 01/28/2019	Shoreline monitoring and posting not conducted at E-210.1 due to government shutdown	Section VI.B. MRP Section VI.B & Section VI.c.5.b.viii	SEP0227 SEP0229, 232 SEP0325, 329
01/06/2019	Faulty sampling during a CSD event due to battery failure of the sampler at CSD – 010	Section VI.B. MRP Section IV.B.1.	SEP0229, 231 SEP0325, 329
01/07/2019	Faulty wet-weather monitoring and lack of sampling during wet weather due to operations staff error No sampling at EFF-001B, only fecal coliform at EFF-002, and no sampling at EFF-003	Section VI.B. MRP Section IV.B.1.	SEP0229, 231 SEP0325, 329
01/16/2019	Faulty field sampling during a CSD event due to field staff error No sample results for CSD-025	Section VI.B. MRP Section IV.B.1.	SEP0229, 231 SEP0325, 329

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All Instances of Non-Compliance of the NPDES Permit for the SEP

Current Permit # CA0037664

Date of Violation	Description of Violation	Permit Term Violated	Page Number of Exhibit 14
01/17/2019	Faulty sampling due to (many) staff errors Single grab samples were taken rather than the required composite samples at CSD-025 and CSD-031A	Section VI.B. MRP Section IV.B.1.	SEP0229, 232 SEP0325, 329
01/31/2019 (Month)	Failure to conduct dry weather acute toxicity test at EFF-001A for the month of January due to wet weather and plant shutdowns	Section VI.B. MRP Section V.A.1.	SEP0229 SEP0325, 329
02/13/2019	A single manual grab sample rather than a composite sample taken after CSD event due to equipment failure Location: CSD - 010	Section VI.B. MRP Section IV.B.1.	SEP0229, 231 SEP0325, 329
02/13/2019	Failure to sample after CSD event due to equipment failure Location: CSD -025	Section VI.B. MRP Section IV.B.1.	SEP0229, 231 SEP0325, 329
02/20/2019	Exceedance of influent cyanide of 47.8ug/L when permit describes a threshold of 21ug/L for a “significant cyanide discharge”.	Section VI.C.6.b.	SEP0229, 230
03/07/2019	Wet weather samples not collected for enterococcus at EFF-001B, EFF-002, and EFF-003, and fecal coliform at EFF-003 due to staff negligence	Section VI.B. MRP Section IV.B.1.	SEP0240, 241

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All Instances of Non-Compliance of the NPDES Permit for the SEP

Current Permit # CA0037664

Date of Violation	Description of Violation	Permit Term Violated	Page Number of Exhibit 14
04/08/2019 – 04/12/2019 **Violation**	Effluent did not meet acute toxicity limitation Violation type: Acute Toxicity Violation Description: Acute Toxicity 11 Sample 90th Percentile limit is 70% survival and reported value was 55% survival at EFF-001A **Violation #1066835**	Section IV.A.4.b **Corrective Action: None**	SEP0239 SEP0249 SEP0251 SEP0325, 327
05/18/2019	Major storm event causing exceedance of available capacity. Unanticipated bypass.	Section VI.C.5.b.i - iv	SEP0262, 264
05/19/2019	Lack of CSD sampling due to back-to-back CSD events and staff unavailable to reset the sampler	Section VI.B. MRP Section IV.B.1.	SEP0262, 264
05/19/2019	Shoreline monitoring and posting not conducted due to monitoring location error	Section VI.B. MRP Section VI.B & Section VI.c.5.b.viii	SEP0262, 264 SEP0325, 329

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All Instances of Non-Compliance of the NPDES Permit for the SEP

Current Permit # CA0037664

Date of Violation	Description of Violation	Permit Term Violated	Page Number of Exhibit 14
05/20/2019	Acute toxicity test shows low survival in document, but is not mentioned in neither the annual nor monthly SMRs	Section IV.A.4.	SEP0250
05/29/2019 **Violation**	Exceedance of total residual chlorine in effluent due to human error Violation type: Category 2 Pollutant (Effluent Violation for Group 2 Pollutant) Description: Chlorine, total Residual Instantaneous Maximum limit is 0.0 mg/L and reported value was 0.2 mg/L at EFF-001A **Violation ID#1066839**	Section IV.A.1. **Corrective action: None**	SEP0260 SEP0262 SEP0325, 328
06/07/2019 **Violation**	Effluent did not meet acute toxicity limitation for an 11-sample median value of not less than 90% survival **Violation ID#1066836**	Section IV.A.4.a **Corrective Action: None**	SEP0261 SEP0272-3 SEP0325, 327
06/07/2019 **Violation**	Effluent did not meet acute toxicity limitation for an 11-sample 90th percentile value of not less than 70% survival **Violation ID#1066837**	Section IV.A.4.b **Corrective Action: None**	SEP0261 SEP0272-3 SEP0325, 327

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All Instances of Non-Compliance of the NPDES Permit for the SEP

Current Permit # CA0037664

Date of Violation	Description of Violation	Permit Term Violated	Page Number of Exhibit 14
06/15/2019 **Violation**	Violation type: Category 1 Pollutant (Effluent Violation for Group 1 Pollutant) Description: Biochemical Oxygen Demand (BOD) (5-day @ 20 Deg. C) Weekly Average limit is 45 m **Violation ID#1066841**	Section IV.A.1. **Corrective Action: None**	SEP0272-3, 272, 274 SEP0325, 328
06/15/2019 **Violation**	Violation type: Category 1 Pollutant (Effluent Violation for Group 1 Pollutant) Description: Total Suspended Solids (TSS) Weekly Average limit is 45 mg/L and reported value **Violation ID#1066846**	Section IV.A.1. **Corrective Action: None**	SEP0272-3, 272, 274 SEP0325, 328
06/22/2019 **Violation**	Violation type: Category 1 Pollutant (Effluent Violation for Group 1 Pollutant) Description: Biochemical Oxygen Demand (BOD) (5-day @ 20 Deg. C) Weekly Average limit is 45 m **Violation ID#1066843**	Section IV.A.1. **Corrective Action: None**	SEP0272-3, 272, 274 SEP0325, 328

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All Instances of Non-Compliance of the NPDES Permit for the SEP

Current Permit # CA0037664

Date of Violation	Description of Violation	Permit Term Violated	Page Number of Exhibit 14
06/22/2019 **Violation**	Violation type: Category 1 Pollutant (Effluent Violation for Group 1 Pollutant) Description: Total Suspended Solids (TSS) Weekly Average limit is 45 mg/L and reported value **Violation ID#1066847**	Section IV.A.1. **Corrective Action: None**	SEP0272-3, 272, 274 SEP0325, 328
06/30/2019 (month) **Violation**	Violation Type: (Effluent Violation for Group 1 Pollutant) Description: Biochemical Oxygen Demand (BOD) (5-day @ 20 Deg. C) Monthly Average limit is 30 **Violation ID#1066844**	Section IV.A.1. **Corrective Action: None**	SEP0272-3, 272, 274 SEP0325, 328
06/30/2019 (month) **Violation**	Violation Type: (Effluent Violation for Group 1 Pollutant) Description: BOD5 @ 20 Deg. C, Percent Removal Monthly Average limit is 85 % and reported value is les **Violation ID#1066845**	Section IV.A.2. **Corrective Action: None**	SEP0272-3, 272, 274 SEP0325, 328
06/30/2019 (month) **Violation**	Violation Type: (Effluent Violation for Group 1 Pollutant) Description: Total Suspended Solids (TSS) Monthly Average limit is 30 mg/L and reported value **Violation ID#1066848**	Section IV.A.1. **Corrective Action: None**	SEP0272-3, 272, 274 SEP0325, 328

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All Instances of Non-Compliance of the NPDES Permit for the SEP

Current Permit # CA0037664

Date of Violation	Description of Violation	Permit Term Violated	Page Number of Exhibit 14
06/30/2019 (Month) **Violation**	Exceedance of 10% of the samples in any calendar month in fecal coliform density equal to or greater than 1100 MPN/100mL after secondary treatment and reported number was 15% **Violation ID#1066850**	Section IV.A.3.b. **Corrective Action: None**	SEP0272-3, 272, 274 SEP0325, 328
06/30/2019 **Violation**	Violation Type: Category 1 Pollutant (Effluent Violation for Group 1 Pollutant) Description: Total Suspended Solids (TSS), Percent Removal Monthly Average limit is 85 % and reported value is 80% at EFF-001A **Violation ID#1066849**	Section IV.A.1. **Corrective Action: None**	SEP0272 SEP0273, 274 SEP0325
06/30/2019 – 07/06/2019	Weekly TSS exceedance in the effluent	Section IV.A.1.	SEP0288, 289 SEP0325, 328
07/17/2019	Lack of dry weather compliance sampling and monitoring for the 24-hour EFF-001A composite sample for BOD, COD, and TSS and 24-hour INF-001 composite sample for TSS due to plant shutdown	Section VI.B.MRP Section IV.A.	SEP0288, 289

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All Instances of Non-Compliance of the NPDES Permit for the SEP

Current Permit # CA0037664

Date of Violation	Description of Violation	Permit Term Violated	Page Number of Exhibit 14
07/31/2019 **Violation in CIWQS**	Category 1 Pollutant (Effluent Violation for Category 1 pollutant) Oil and Grease Monthly Average limit is 10 mg/L and reported value was 12 mg/L a **Violation ID: 1066998**	Section IV.A.1. **Corrective Action: None**	SEP0272 SEP0286 SEP0288, 289 SEP00325, 328
07/31/2019 (month)	Exceedance of monthly TSS concentration after secondary treatment	Section IV.A.1.	SEP0288, 289 SEP0325, 328
09/20/2019 & 09/25/2019	Incomplete composite samples taken due to plant shutdowns	Section VI.B.MRP Section IV.A.	SEP0291
10/03/2019 & 10/09/2019 & 10/23/2019	Incomplete composite samples taken due to plant shutdowns	Section VI.B.MRP Section IV.A.	SEP0299
11/06/2019 & 11/07/2019	Partial composite sampling taken rather than complete due to plant shut downs at EFF-001A and INF-001	Section VI.B.MRP Section IV.B.	SEP0307
11/22/2019 – 11/26/2019	Lack of sampling due to inaccessibility of sampling site due to inability to communicate with construction contractors during thanksgiving holiday	Section VI.B.MRP Section IV.B.	SEP0307, 308

Exhibit 11

All Instances of Non-Compliance of the NPDES Permit for the SEP

Current Permit # CA0037664

Date of Violation	Description of Violation	Permit Term Violated	Page Number of Exhibit 14
11/24/2019 – 11/30/2019	Effluent monitoring interrupted by wet weather at EFF-001A	Section VI.B.MRP Section IV.B.	SEP0307, 308
11/26/2019	Faulty CSD sampling due to equipment failure	Section VI.B. MRP Section IV.B.1.	SEP0307, 308
12/07/2019	Single grab samples taken rather than composites due to equipment failure at CSD – 025 and CSD – 031A	Section VI.C.5.b.ix	SEP0316, 317 SEP0325, 329
12/22/2019	Failure to maintain peak flow rate during a wet weather event at the Mariposa Pump Station	Section VI.C.5.b.i & Section VI.C.5.b.iv	SEP0316
03/02/2020 **Violation**	Effluent did not meet acute toxicity 11 Sample 90th Percentile limit. The limit is 70 % survival and reported value was 60 % survival at EFF-001A. **Violation ID#1076565**	Section IV.A.4.b. **Corrective Action: None**	SEP0339 SEP0341 SEP0343
03/06/2020 **Violation**	Effluent did not meet acute toxicity 11 Sample 90th Percentile. The limit is 70 % survival and reported value was 50 % survival at EFF-001A. **Violation ID#1076566**	Section IV.A.4.b. **Corrective Action: None**	SEP0340-1 SEP0343

Exhibit 11

All Instances of Non-Compliance of the NPDES Permit for the SEP

Current Permit # CA0037664

Date of Violation	Description of Violation	Permit Term Violated	Page Number of Exhibit 14
3/17/20	Shoreline monitoring did not occur at E-210.1 Aquatic park-Hyde street pier due to inaccessibly as a result of covid shelter-in-place order	Section VI.B. MRP Section VI.B & Section VI.c.5.b.viii	SEP0342-3, 342, 345
4/30/20 (month)	Shoreline monitoring did not occur at E-210.1 Aquatic park-Hyde street pier due to inaccessibly as a result of covid shelter-in-place order	Section VI.B. MRP Section VI.B & Section VI.c.5.b.viii	SEP0352-3, 352, 355
5/31/30 (month)	Shoreline monitoring did not occur at E-210.1 Aquatic park-Hyde street pier and location 220 (on 5/4/2020) due to inaccessibly as a result of Covid-19 shelter-in-place order	Section VI.B. MRP Section VI.B & Section VI.c.5.b.viii	SEP0361-2, 361, 363
6/10/20 – 6/12/20	Unauthorized discharge due to a leak caused by construction activities	Section III.B.	SEP0371, 372 SEP0379
6/30/20 (month)	Shoreline monitoring did not occur at E-210.1 Aquatic park-Hyde street pier due to inaccessibly as a result of covid shelter-in-place order	Section VI.B. MRP Section VI.B & Section VI.c.5.b.viii	SEP0370-1, 370, 372

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EXHIBIT 12

Appendix O-TL2

City and County of San Francisco
SFPUC Wastewater Enterprise
Monthly Bay Shoreline Bacteriological Report
January 2016

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Mon/04	Tue/05	Wed/06	Thu/07	Fri/08	Sat/09	Mon/11	Tue/12
202_Lagoon								
202.4	97	31	122				161	
202.5	31						75	
210.1	20						345	
211	201						345	< 10
220								
300.1	52						40	
301.1	3873	**11199**	4884	5794	602		246	
301.2	63						< 10	
320	109		**> 24196**	**> 24196**	**> 24196**	3076	683	

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥400** MPN/100 mL[1]

Location	Mon/04	Tue/05	Wed/06	Thu/07	Fri/08	Sat/09	Mon/11	Tue/12
202_Lagoon								
202.4	52	20	31				98	
202.5	< 10						31	
210.1	< 10						< 10	
211	31						< 10	< 10
220								
300.1	10						< 10	
301.1	399	**650**	259	85	20		41	
301.2	10						< 10	
320	20		**> 24196**	**> 24196**	**3080**	75	75	

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Mon/04	Tue/05	Wed/06	Thu/07	Fri/08	Sat/09	Mon/11	Tue/12
202_Lagoon								
202.4	**262**	**146**	98				52	
202.5	< 10						10	
210.1	< 10						10	
211	10						**292**	< 10
220								
300.1	20						< 10	
301.1	**336**	**2282**	**816**	**110**	< 10		63	
301.2	20						10	
320	10		**24196**	**8164**	**292**	31	20	

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)
Crissy Field	202_Lagoon, 202.4, 202.5	01/03 0.02
Aquatic Park	210.1, 211	01/04 0.09
Mission Creek	220	01/05 1.18
Candlestick Point State Recreation Area	300.1, 301.1, 301.2	01/06 1.30 01/07 0.05
Islais Creek	320	01/09 0.20

STATION POSTED due to elevated bacteria count

STATION POSTED due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)

Appendix O-TL2

City and County of San Francisco
SFPUC Wastewater Enterprise
Monthly Bay Shoreline Bacteriological Report
January 2016

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Mon/18	Tue/19	Wed/20	Thu/21	Fri/22	Sat/23	Sun/24	Mon/25	30-day Geometric Mean[2]
202_Lagoon		**> 24196**	830						
202.4		5794	146					41	154
202.5		4352	171					31	140
210.1		3076	836					10	178
211		428	259					20	107
220	**> 24196**	**> 24196**	**24196**	7701	**12033**	8664	754		9783
300.1		6488	5794	317				85	358
301.1		5794	4884	605				717	2162
301.2	**17329**	959	644	341				98	301
320	**> 24196**	**> 24196**	**> 24196**	**> 24196**	6867			98	5489

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥400** MPN/100 mL[1]

Location	Mon/18	Tue/19	Wed/20	Thu/21	Fri/22	Sat/23	Sun/24	Mon/25	30-day Geometric Mean[2]
202_Lagoon		**1043**	86						
202.4		266	20					< 10	40
202.5		**426**	< 10					< 10	27
210.1		**749**	110					< 10	38
211		63	52					< 10	22
220	**17329**	**> 24196**	**2613**	**402**	**833**	**441**	110		1509
300.1		**588**	**1670**	20				31	63
301.1		**697**	231	31				10	109
301.2	384	**414**	158	63				10	55
320	**7270**	**> 24196**	**> 24196**	**> 24196**	368			31	1578

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Mon/18	Tue/19	Wed/20	Thu/21	Fri/22	Sat/23	Sun/24	Mon/25	30-day Geometric Mean[2]
202_Lagoon		**2187**	20						
202.4		**399**	10					20	77
202.5		**495**	< 10					< 10	22
210.1		**148**	52					< 10	24
211		**216**	20					< 10	33
220	**1674**	**> 24196**	**563**	85	**384**	**216**	41		488
300.1		**1467**	**670**	41				20	74
301.1		**882**	**256**	10				10	126
301.2	**448**	**959**	**110**	10				30	60
320	**2187**	**> 24196**	**17329**	**487**	97			< 10	481

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)			
Crissy Field	202_Lagoon, 202.4, 202.5	01/13	0.18	01/18	0.23
Aquatic Park	210.1, 211	01/14	0.15	01/19	1.20
Mission Creek	220	01/15	0.17	01/22	0.42
Candlestick Point	300.1, 301.1, 301.2	01/16	0.27	01/23	0.01
State Recreation Area		01/17	1.07	01/29	0.40
Islais Creek	320				

STATION POSTED due to elevated bacteria count
STATION POSTED due to Combined Sewer Discharge
STATION SAMPLED due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)

[2]Geometric means calculated for 5 or more samples per 30-day period.

Reviewed b R Duggan

Appendix O-TL2

City and County of San Francisco
SFPUC Wastewater Enterprise
Monthly Bay Shoreline Bacteriological Report
January 2017

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Tue/03	Wed/04	Thu/05	Sun/08	Mon/09	Tue/10	Tue/10	Wed/11	Thu/12	Fri/13	Sat/14
202.4	41				201	161		2098	882	213	
202.5	275				146			1236			
210.1	148				231			1046	583		
211	187				573	794		**11199**	6294		
300.1	697	410			1198	**24196**		1187	650		
301.1	4352	**19863**	882		4611	6131		**> 24196**	**12033**	3873	
301.2	51				2755	4884		1071			
320	201			**> 24196**	**> 24196**	**19863**	**> 24196 ***	**> 24196**	**> 24196**	**11199**	3873

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥400** MPN/100 mL[1]

Location	Tue/03	Wed/04	Thu/05	Sun/08	Mon/09	Tue/10	Tue/10	Wed/11	Thu/12	Fri/13	Sat/14
202.4	10				20	31		**934**	275	74	
202.5	< 10				31			96			
210.1	86				52			346	74		
211	85				75	122		**6867**	350		
300.1	74	41			85	**1483**		145	52		
301.1	292	**1014**	31		146	**269**		**1439**	145	75	
301.2	20				253	98		168			
320	< 10			**> 24196**	**> 24196**	**959**	**8664 ***	**> 24196**	**8164**	331	108

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Tue/03	Wed/04	Thu/05	Sun/08	Mon/09	Tue/10	Tue/10	Wed/11	Thu/12	Fri/13	Sat/14
202.4	< 10				**121**	63		**1565**	**450**	< 10	
202.5	< 10				20			86			
210.1	< 10				30			**243**	41		
211	10				**414**	**428**		**345**	20		
300.1	**350**	75			**464**	**3441**		**107**	10		
301.1	**1119**	**2282**	63		**546**	**573**		**1201**	98	52	
301.2	10				**399**	**278**		41			
320	< 10			**> 24196**	**3873**	**223**	**789 ***	**24196**	**383**	10	52

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)			
Crissy Field	202.4, 202.5	01/01	0.04	01/08	1.32
Aquatic Park	210.1, 211	01/02	0.09	01/09	0.10
Candlestick Point	300.1, 301.1, 301.2	01/03	0.41	01/10	2.25
State Recreation Area		01/04	0.78	01/11	0.08
Islais Creek	320	01/07	0.72	01/12	0.31

STATION POSTED due to elevated bacteria count

STATION POSTED due to Combined Sewer Discharge (CSD)

* STATION sampled on same day due to another CSD

[1] A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)

Appendix O-TL2

City and County of San Francisco
SFPUC Wastewater Enterprise
Monthly Bay Shoreline Bacteriological Report
January 2017 (cont.)

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Tue/17	Wed/18	Thu/19	Fri/20	Sat/21	Sun/22	Mon/23	Tue/24	Wed/25	Mon/30	30-day Geometric Mean[2]
202.4	213			2359	882 ***	2282 ***	201			160	400
202.5	**> 24196**	1191		1872			504			759	1003
210.1	145			548			336			74	283
211	134			1956			504			135	780
300.1	1153	4352	624	3076**	4352	1500	683			1211	1514
301.1	313						**> 24196**	1576		884	4144
301.2	121			327			609			246	507
320	435		**> 24196**	**> 24196**	**> 24196**	**> 24196**	**> 24196**	**> 24196**	6867	521	9491

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥400** MPN/100 mL[1]

Location	Tue/17	Wed/18	Thu/19	Fri/20	Sat/21	Sun/22	Mon/23	Tue/24	Wed/25	Mon/30	30-day Geometric Mean[2]
202.4	41			97	10 ***	84 ***	20			20	48
202.5	10	41		52			10			122	31
210.1	< 10			86			41			< 10	50
211	< 10			122			20			10	92
300.1	98	**2359**	110	**546 ** **	275	201	98			< 10	147
301.1	20						**1119**	41		< 10	139
301.2	10			31			52			< 10	44
320	20		**19863**	**> 24196**	**11199**	**> 24196**	**> 24196**	**24196**	211	20	2382

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Tue/17	Wed/18	Thu/19	Fri/20	Sat/21	Sun/22	Mon/23	Tue/24	Wed/25	Mon/30	30-day Geometric Mean[2]
202.4	< 10			**156**	**109 *** **	63 ***	20			< 10	57
202.5	10	41		< 10			< 10			52	21
210.1	< 10			20			< 10			< 10	22
211	20			20			10			< 10	43
300.1	**350**	**1725**	84	**160 ** **	**109**	31	63			30	148
301.1	30						**556**	20		< 10	178
301.2	41			< 10			30			10	39
320	41		**1860**	**9208**	**909**	**6867**	**1529**	**464**	31	10	484

Table 4. Beaches/Stations/Rainfall

Beaches	Stations
Crissy Field	202.4, 202.5
Aquatic Park	210.1, 211
Candlestick Point State Recreation Area	300.1, 301.1, 301.2
Islais Creek	320

Rainfall (in.)	
01/18	0.76
01/19	0.20
01/20	0.93
01/21	0.35
01/22	0.85
01/23	0.55

STATION POSTED due to elevated bacteria count

STATION POSTED due to Combined Sewer Discharge

** STATION sampled this day in error

*** STATION de-posted in error

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)

[2]Geometric means calculated for 5 or more samples per 30-day period.

Reviewed by: R Duggan

Appendix O-TL2

City and County of San Francisco
SFPUC Wastewater Enterprise
Monthly Bay Shoreline Bacteriological Report
January 2018 (cont.)

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Tue/02	Wed/03	Mon/08	Tue/09	Wed/10	Thu/11	Fri/12	Sat/13
202.4	86		5172	3255	327			
202.5	10		**> 24196**	2247	*	160		
210.1	10		754	1046				
211	213		504					
220	41		**> 24196**	**> 24196**	4106			
300.1	20		12997	364				
301.1	5475	624	**> 24196**	**19863**	**> 24196**	**> 24196**	**24196**	3448
301.2	20		30	573	1137			
320	185		**> 24196**	**> 24196**	**> 24196**	**> 24196**	3448	

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥400** MPN/100 mL[1]

Location	Tue/02	Wed/03	Mon/08	Tue/09	Wed/10	Thu/11	Fri/12	Sat/13
202.4	63		**432**	359	41			
202.5	< 10		**794**	295	*	10		
210.1	< 10		243	295				
211	< 10		86					
220	< 10		**> 24196**	**> 24196**	288			
300.1	10		**1850**	52				
301.1	332	86	**2851**	**1145**	**3076**	**959**	**548**	63
301.2	10		10	121	226			
320	10		**24196**	**6488**	**8164**	**554**	213	

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Tue/02	Wed/03	Mon/08	Tue/09	Wed/10	Thu/11	Fri/12	Sat/13
202.4	10		**504**	**160**	10			
202.5	< 10		**910**	**121**	*	< 10		
210.1	< 10		**131**	20				
211	10		63					
220	10		**> 24196**	**8164**	41			
300.1	20		**3441**	86				
301.1	**350**	41	**1616**	**4352**	**2723**	**882**	**496**	84
301.2	< 10		30	**395**	52			
320	10		**8664**	**697**	**480**	86	< 10	

Table 4. Beaches/Stations/Rainfall

Beaches	Stations
Crissy Field	202.4, 202.5
Aquatic Park	210.1, 211
Mission Creek	220
Candlestick Point State Recreation Area	300.1, 301.1, 301.2
Islais Creek	320

Rainfall (in.)	
01/03	0.16
01/04	0.02
01/05	0.28
01/08	3.31
01/09	0.35
01/10	0.05
01/13	0.01

STATION POSTED due to elevated bacteria count

STATION POSTED due to Combined Sewer Discharge

* Station sampled the next day due to late turning bacterial value

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)

[2]Geometric means calculated for 5 or more samples per 30-day period.

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City and County of San Francisco
SFPUC Wastewater Enterprise
Monthly Bay Shoreline Bacteriological Report
January 2018

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Tue/16	Wed/17	Thu/18	Fri/19	Mon/22	Tue/23	Mon/29	Tue/30	30-day Geometric Mean[2]
202.4	3654 **	3448 **	1291 **	< 10	556		86		571
202.5	185				201		41		279
210.1	20				74		86		100
211	109				63		52		131
220	173				**14136**	31	63		910
300.1	52				231		520	51	226
301.1	616				1187		723	744	4216
301.2	52				< 10		644		78
320	259				1178		63		2527

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥400** MPN/100 mL[1]

Location	Tue/16	Wed/17	Thu/18	Fri/19	Mon/22	Tue/23	Mon/29	Tue/30	30-day Geometric Mean[2]
202.4	**2382 ** **	**3448 ** **	**548 ** **	< 10	31		52		176
202.5	< 10				< 10		10		30
210.1	10				41		31		46
211	20				31		< 10		22
220	30				279	10	< 10		186
300.1	10				86		86	< 10	49
301.1	20				131		63	20	237
301.2	< 10				< 10		341		37
320	< 10				75		20		305

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Tue/16	Wed/17	Thu/18	Fri/19	Mon/22	Tue/23	Mon/29	Tue/30	30-day Geometric Mean[2]
202.4	**4106 ** **	**226 ** **	**1354 ** **	20	20		20		98
202.5	< 10				10		20		30
210.1	< 10				10		< 10		17
211	10				< 10		< 10		14
220	10				**266**	41	10		131
300.1	10				63		**132**	10	65
301.1	< 10				< 10		**169**	61	216
301.2	< 10				< 10		86		34
320	10				10		< 10		66

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)
Crissy Field	202.4, 202.5	01/18 0.18
Aquatic Park	210.1, 211	01/19 0.03
Mission Creek	220	01/21 0.01
Candlestick Point	300.1, 301.1, 301.2	01/22 0.25
State Recreation Area		01/24 0.22
Islais Creek	320	

STATION POSTED due to elevated bacteria count

STATION POSTED due to Combined Sewer Discharge

** Station sampled 110 yards east of the established site

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)

[2]Geometric means calculated for 5 or more samples per 30-day period.

Reviewed by: R Duggan

Appendix O-TL2

City and County of San Francisco
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Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Mon/01	Mon/08	Tue/09	Tue/16	Mon/22	Tue/23	Mon/29	30-day Geometric Mean[2]
202.4	20	10		< 10	20		31	17
202.5	10	30		10	< 10		41	17
210.1	41	10		74	41		226	49
211	134	< 10		74	41		279	65
300.1	41	209		160	41		10	56
301.1	84	3255	110	496	20		1789	285
301.2	20	469		< 10	426	< 10	41	50
320	74	98		231	52		52	85

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥400** MPN/100 mL[1]

Location	Mon/01	Mon/08	Tue/09	Tue/16	Mon/22	Tue/23	Mon/29	30-day Geometric Mean[2]
202.4	20	< 10		< 10	10		10	11
202.5	< 10	10		< 10	< 10		10	10
210.1	10	10		< 10	31		41	17
211	20	< 10		41	31		98	30
300.1	20	20		52	10		< 10	18
301.1	10	**2613**	10	241	< 10		98	63
301.2	10	< 10		< 10	**404**	< 10	20	21
320	20	< 10		41	30		10	19

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Mon/01	Mon/08	Tue/09	Tue/16	Mon/22	Tue/23	Mon/29	30-day Geometric Mean[2]
202.4	< 10	< 10		10	< 10		< 10	10
202.5	10	< 10		< 10	< 10		< 10	10
210.1	10	< 10		< 10	< 10		< 10	10
211	20	< 10		31	< 10		52	20
300.1	10	31		20	30		< 10	18
301.1	< 10	**1187**	< 10	20	10		31	30
301.2	< 10	< 10		< 10	41	10	20	14
320	10	10		20	< 10		< 10	11

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)
Crissy Field	202.4, 202.5	02/02 0.15
Aquatic Park	210.1, 211	02/17 0.53
Candlestick Point	300.1, 301.1, 301.2	02/18 0.14
State Recreation Area		02/19 0.16
Islais Creek	320	

STATION POSTED due to elevated bacteria count

STATION POSTED due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)

[2]Geometric means calculated for 5 or more samples per 30-day period.

Reviewed by: R Duggan

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City and County of San Francisco
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Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Mon/06	Tue/07	Wed/08	Thu/09	Fri/10	Sat/11	Mon/13	Tue/14
202.4	158	2359	295				**> 24196**	3654
202.5	204	187					886	
210.1	389	733	538				624	
211	120	299					677	
300.1	2909	**> 24196**	6488	4106	4884	1106	1354	
301.1	**12997**	**12033**	**19863**	2143			613	
301.2	563	471					158	
320	565	**> 24196**	**> 24196**	8164	**> 24196**	1515	538	

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥400** MPN/100 mL[1]

Location	Mon/06	Tue/07	Wed/08	Thu/09	Fri/10	Sat/11	Mon/13	Tue/14
202.4	41	364	86				301	31
202.5	31	85					31	
210.1	63	171	85				10	
211	20	86					20	
300.1	**1119**	**10462**	**1234**	**1198**	323	211	97	
301.1	393	**1250**	**1421**	246			10	
301.2	145	86					31	
320	52	**> 24196**	**19863**	**563**	**9804**	109	52	

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Mon/06	Tue/07	Wed/08	Thu/09	Fri/10	Sat/11	Mon/13	Tue/14
202.4	< 10	**504**	20				74	30
202.5	< 10	10					20	
210.1	< 10	**134**	52				41	
211	< 10	31					20	
300.1	**241**	**6488**	**631**	**435**	**211**	41	74	
301.1	**201**	**723**	**749**	63			< 10	
301.2	**161**	62					< 10	
320	31	**> 24196**	**1309**	**109**	**554**	20	10	

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)			
Crissy Field	202.4, 202.5	02/02	0.16	02/07	0.77
Aquatic Park	210.1, 211	02/03	0.46	02/08	0.27
Candlestick Point	300.1, 301.1, 301.2	02/04	0.23	02/09	0.67
State Recreation Area		02/05	0.07	02/10	0.02
Islais Creek	320	02/06	0.54		

STATION POSTED due to elevated bacteria count

STATION POSTED due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)

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Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Sat/18	Sun/19	Mon/20	Tue/21	Wed/22	Thu/23	Fri/24	Sat/25	Mon/27	Tue/28	30-day Geometric Mean[2]
202.4			988	2143	767				228		1153
202.5			1198	1723					537		578
210.1			< 10	4352	561				278		400
211			613	1850	309				295		425
300.1				3255	776				331		2546
301.1				**12033**	2187				504		3905
301.2				504					233		345
320	**> 24196**	**> 24196**	**> 24196**	**> 24196**	**> 24196**	6131	1063	1935	275	683	5094

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥400** MPN/100 mL[1]

Location	Sat/18	Sun/19	Mon/20	Tue/21	Wed/22	Thu/23	Fri/24	Sat/25	Mon/27	Tue/28	30-day Geometric Mean[2]
202.4			52	211	31				10		70
202.5			98	216					10		51
210.1			< 10	**464**	74				10		49
211			52	295	75				< 10		45
300.1				305	110				< 10		362
301.1				**712**	75				< 10		176
301.2				85					< 10		51
320	**> 24196**	**1187**	**> 24196**	**> 24196**	**> 24196**	**537**	52	110	10	20	908

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Sat/18	Sun/19	Mon/20	Tue/21	Wed/22	Thu/23	Fri/24	Sat/25	Mon/27	Tue/28	30-day Geometric Mean[2]
202.4			31	**121**	41				< 10		41
202.5			86	52					10		21
210.1			< 10	74	30				< 10		30
211			52	**109**	30				< 10		27
300.1				**171**	20				< 10		158
301.1				**226**	30				10		91
301.2				30					10		31
320	**2603**	75	**9208**	**4106**	**1236**	52	20	10	31	10	185

Table 4. Beaches/Stations/Rainfall

Beaches	Stations
Crissy Field	202.4, 202.5
Aquatic Park	210.1, 211
Candlestick Point State Recreation Area	300.1, 301.1, 301.2
Islais Creek	320

Rainfall (in.)			
02/16	0.29	02/26	0.09
02/17	1.07	02/27	0.02
02/18	0.13		
02/19	0.06		
02/20	1.86		
02/21	0.13		

STATION POSTED due to elevated bacteria count
STATION POSTED due to Combined Sewer Discharge
STATION POSTED as a precautionary measure due to minor treated effluent leak under Pier 80

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)
[2]Geometric means calculated for 5 or more samples per 30-day period.

Reviewed by: A Loveland

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City and County of San Francisco
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Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Mon/05	Tue/06	Mon/12	Tue/13	Tue/20	Mon/26	Tue/27	Wed/28	30-day Geometric Mean[2]
202.4	613	< 10	2851	< 10	< 10	233	20		70
202.5	10		41		10	203			
210.1	41		63		52	< 10			
211	52	20	41		98	512	135		81
220	602		63		52	7701			
300.1	85		10		< 10	201	404	216	73
301.1	457		355		1274	**24196**	97		865
301.2	< 10		< 10		1355	97	132		70
320	8664		63		1585	97			

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥400** MPN/100 mL[1]

Location	Mon/05	Tue/06	Mon/12	Tue/13	Tue/20	Mon/26	Tue/27	Wed/28	30-day Geometric Mean[2]
202.4	20	< 10	**2723**	< 10	< 10	148	10		36
202.5	< 10		10		< 10	< 10			
210.1	31		10		< 10	< 10			
211	20	< 10	20		41	**465**	86		43
220	10		20		< 10	41			
300.1	31		< 10		< 10	63	262	52	37
301.1	41		< 10		31	355	20		39
301.2	< 10		< 10		< 10	31	10		13
320	84		20		31	20			

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Mon/05	Tue/06	Mon/12	Tue/13	Tue/20	Mon/26	Tue/27	Wed/28	30-day Geometric Mean[2]
202.4	**131**	< 10	75	< 10	< 10	**323**	10		32
202.5	< 10		< 10		< 10	< 10			
210.1	98		10		20	< 10			
211	**195**	< 10	41		10	**233**	41		44
220	< 10		< 10		30	31			
300.1	10		< 10		< 10	**241**	**110**	**206**	42
301.1	31		< 10		< 10	**216**	< 10		23
301.2	< 10		10		< 10	**359**	10		20
320	< 10		10		< 10	< 10			

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)
Crissy Field	202.4, 202.5	02/26 0.27
Aquatic Park	210.1, 211	02/28 0.16
Mission Creek	220	
Candlestick Point State Recreation Area	300.1, 301.1, 301.2	
Islais Creek	320	

STATION POSTED due to elevated bacteria count

STATION POSTED due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)

[2]Geometric means calculated for 5 or more samples per 30-day period.

Reviewed by: R Duggan

City and County of San Francisco
SFPUC Wastewater Enterprise
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Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Sun/06	Mon/07	Tue/08	Wed/09	Thu/10	Fri/11	Sat/12	Sun/13	Mon/14	Tue/15	Wed/16	Mon/21	Tue/22	Mon/28	30-day Geometric Mean[2]
202.4		602	72						173			10		20	68
202.5		1178	86						169			52		63	141
210.1		512							231			41		20	
211		450							288			61		216	
220		**19863**	1450			**> 24196**	5794	**> 24196**	6867	488					6136
300.1		1722	97						455			1112	52	332	337
301.1		1664							**15531**	309		**12033**	1396	908	2226
301.2		563							341			10		< 10	
320	**> 24196**	**> 24196**	**> 24196**	6131	2909	**> 24196**	> **24196**	**> 24196**	**> 24196**	**10462**	712	399		426	7067

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥400** MPN/100 mL[1]

Location	Sun/06	Mon/07	Tue/08	Wed/09	Thu/10	Fri/11	Sat/12	Sun/13	Mon/14	Tue/15	Wed/16	Mon/21	Tue/22	Mon/28	30-day Geometric Mean[2]
202.4		379	10						31			10		< 10	26
202.5		131	< 10						10			< 10		10	17
210.1		52							20			< 10		< 10	
211		41							63			30		122	
220		**743**	41			**17329**	109	**3873**	384	63					474
300.1		**473**	31						31			384	< 10	63	69
301.1		41							**443**	31		41	10	20	41
301.2		63							31			< 10		< 10	
320	**> 24196**	**7270**	**4106**	**3282**	**798**	**> 24196**	**> 24196**	**> 24196**	**> 24196**	336	51	31		20	1974

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Sun/06	Mon/07	Tue/08	Wed/09	Thu/10	Fri/11	Sat/12	Sun/13	Mon/14	Tue/15	Wed/16	Mon/21	Tue/22	Mon/28	30-day Geometric Mean[2]
202.4		**435**	< 10						10			< 10		< 10	21
202.5		**158**	< 10						10			< 10		< 10	17
210.1		41							10			10		< 10	
211		41							41			10		31	
220		**120**	< 10			**3448**	41	**1145**	**122**	10					113
300.1		**448**	< 10						52			**173**	< 10	20	45
301.1		52							**389**	< 10		**754**	41	52	83
301.2		63							10			41		10	
320	**12033**	**393**	75	20	20	**17329**	**2187**	**> 24196**	**3873**	31	10	10		< 10	251

Table 4. Beaches/Stations/Rainfall

Beaches	Stations
Crissy Field	202.4, 202.5
Aquatic Park	210.1, 211
Mission Creek	220
Candlestick Point State Recreation Area	300.1, 301.1, 301.2
Islais Creek	320

Rainfall (in.)			
03/03	0.08	03/11	0.53
03/04	0.38	03/12	1.14
03/05	1.29	03/13	0.59
03/06	0.45	03/20	0.10
03/07	0.53	03/21	0.41
03/09	0.15	03/22	0.08
03/10	1.10		

STATION POSTED due to elevated bacteria count
STATION POSTED due to Combined Sewer Discharge
NOTIFICATION sent due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)

[2]Geometric means calculated for 5 or more samples per 30-day period.

Reviewed by: R Duggan

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City and County of San Francisco
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Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Wed/01	Thu/02	Fri/03	Sun/05	Mon/06	Tue/07	Wed/08	Mon/13	Fri/17	Sat/18
202.4					195			41		
202.5					4611			134		
210.1					435			41		
211					364			52		
300.1					1539			573		
301.1					789			132		
301.2					712			85		
320	504	512	617	**> 24196**	**> 24196**	4884	1860	457	201	309

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥400** MPN/100 mL[1]

Location	Wed/01	Thu/02	Fri/03	Sun/05	Mon/06	Tue/07	Wed/08	Mon/13	Fri/17	Sat/18
202.4					41			< 10		
202.5					20			< 10		
210.1					52			< 10		
211					31			10		
300.1					169			20		
301.1					52			20		
301.2					145			< 10		
320	31	10	31	**> 24196**	**10462**	426	110	85	10	41

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Wed/01	Thu/02	Fri/03	Sun/05	Mon/06	Tue/07	Wed/08	Mon/13	Fri/17	Sat/18
202.4					31			< 10		
202.5					20			< 10		
210.1					31			10		
211					20			10		
300.1					97			< 10		
301.1					20			10		
301.2					10			< 10		
320	< 10	< 10	< 10	**> 24196**	**1616**	31	10	10	< 10	< 10

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)
Crissy Field	202.4, 202.5	03/04 0.68
Aquatic Park	210.1, 211	03/05 0.46
Candlestick Point State Recreation Area	300.1, 301.1, 301.2	03/06 0.11
Islais Creek	320	

STATION POSTED due to elevated bacteria count

STATION POSTED due to Combined Sewer Discharge

STATION POSTED as a precautionary measure due to minor treated effluent leak at pier 80

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)

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City and County of San Francisco
SFPUC Wastewater Enterprise
Monthly Bay Shoreline Bacteriological Report
March 2017 (cont.)

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Mon/20	Tue/21	Wed/22	Thu/23	Fri/24	Mon/27	Tue/28	30-day Geometric Mean[2]
202.4	20	**> 24196**	1860			96		297
202.5	20	3654				173		379
210.1	52	295				41		102
211	197	441				108		178
300.1	4352	4352	2247			1539	341	1966
301.1	908	7701	275			2382		884
301.2	1236	52				74		196
320	1223	**> 24196**	**> 24196**	9804	3873	960		2303

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥400** MPN/100 mL[1]

Location	Mon/20	Tue/21	Wed/22	Thu/23	Fri/24	Mon/27	Tue/28	30-day Geometric Mean[2]
202.4	< 10	269	144			< 10		34
202.5	< 10	52				< 10		16
210.1	< 10	75				< 10		21
211	95	52				30		34
300.1	**620**	**1076**	52			85	20	147
301.1	171	**504**	10			31		55
301.2	231	< 10				10		32
320	75	**> 24196**	**> 24196**	**481**	160	41		264

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Mon/20	Tue/21	Wed/22	Thu/23	Fri/24	Mon/27	Tue/28	30-day Geometric Mean[2]
202.4	< 10	**480**	20			41		33
202.5	< 10	41				< 10		15
210.1	< 10	41				< 10		17
211	10	20				20		15
300.1	**259**	**299**	52			**132**	< 10	90
301.1	86	**341**	10			10		29
301.2	**613**	< 10				73		34
320	10	**12033**	**2489**	10	20	< 10		55

Table 4. Beaches/Stations/Rainfall

Beaches	Stations
Crissy Field	202.4, 202.5
Aquatic Park	210.1, 211
Candlestick Point State Recreation Area	300.1, 301.1, 301.2
Islais Creek	320

Rainfall (in.)	
03/20	0.68
03/21	0.72
03/22	0.09
03/23	0.19
03/24	0.58
03/26	0.02

STATION POSTED due to elevated bacteria count
STATION POSTED due to Combined Sewer Discharge
STATION POSTED due to sampling error

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)
[2]Geometric means calculated for 5 or more samples per 30-day period.

Reviewed by: R Duggan

City and County of San Francisco
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Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Thu/01	Fri/02	Mon/05	Mon/12	Tue/13	Wed/14	Mon/19	Mon/26	Tue/27	30-day Geometric Mean[2]
202.4			41	41			10	< 10		
202.5			31	10			20	< 10		
210.1			31	97			52	52		
211			41	145			135	691	98	140
220			110	41			31	20		
300.1	1935	428	85	62			213	487	75	230
301.1			833	1616			441	521		
301.2			31	52			< 10	< 10	85	27
320			318	41	3654	1137	1236	1187		656

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥400** MPN/100 mL[1]

Location	Thu/01	Fri/02	Mon/05	Mon/12	Tue/13	Wed/14	Mon/19	Mon/26	Tue/27	30-day Geometric Mean[2]
202.4			20	31			< 10	< 10		
202.5			< 10	< 10			< 10	< 10		
210.1			20	< 10			20	31		
211			10	41			41	**657**	10	41
220			31	< 10			< 10	10		
300.1	**414**	31	20	< 10			41	**441**	31	55
301.1			< 10	52			31	20		
301.2			< 10	31			< 10	< 10	< 10	13
320			10	10	52	20	171	31		29

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Thu/01	Fri/02	Mon/05	Mon/12	Tue/13	Wed/14	Mon/19	Mon/26	Tue/27	30-day Geometric Mean[2]
202.4			20	< 10			< 10	10		
202.5			< 10	< 10			< 10	< 10		
210.1			< 10	< 10			< 10	< 10		
211			< 10	< 10			10	< 10	< 10	10
220			< 10	< 10			< 10	10		
300.1	**1664**	41	31	< 10			41	10	< 10	37
301.1			74	31			52	< 10		
301.2			10	< 10			< 10	**187**	< 10	18
320			< 10	< 10	**213**	10	73	20		26

Table 4. Beaches/Stations/Rainfall

Beaches	Stations
Crissy Field	202.4, 202.5
Aquatic Park	210.1, 211
Mission Creek	220
Candlestick Point State Recreation Area	300.1, 301.1, 301.2
Islais Creek	320

Rainfall (in.)

03/01	1.08	03/15	0.17
03/02	0.16	03/16	0.33
03/03	0.08	03/17	0.01
03/04	0.01	03/20	0.68
03/07	0.01	03/21	0.32
03/08	0.08	03/22	0.35
03/12	0.21	03/24	0.06
03/13	0.42	03/25	0.06
03/14	0.20		

STATION POSTED due to elevated bacteria count

STATION POSTED due to Combined Sewer Discharge

STATION POSTED due to an unauthorized discharge; 5-day report submitted to Regional Board

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)

[2]Geometric means calculated for 5 or more samples per 30-day period.

Reviewed by: R Duggan

City and County of San Francisco
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Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Mon/04	Tue/05	Mon/11	Tue/12	Mon/18	Mon/25	30-day Geometric Mean[2]
202.4	20		52		< 10	10	
202.5	< 10		41		10	10	
210.1	160		41		108	10	
211	684		63		41	31	
300.1	187		3255	1789	96	428	537
301.1	3873	171	8664	3282	298	145	966
301.2	< 10		63		20	< 10	
320	197		9804		20	573	

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥400** MPN/100 mL[1]

Location	Mon/04	Tue/05	Mon/11	Tue/12	Mon/18	Mon/25	30-day Geometric Mean[2]
202.4	< 10		10		< 10	< 10	
202.5	< 10		< 10		< 10	< 10	
210.1	10		< 10		30	< 10	
211	336		20		30	20	
300.1	10		379	20	< 10	20	27
301.1	**2909**	30	134	10	31	10	58
301.2	< 10		41		< 10	< 10	
320	41		31		< 10	20	

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Mon/04	Tue/05	Mon/11	Tue/12	Mon/18	Mon/25	30-day Geometric Mean[2]
202.4	< 10		20		< 10	< 10	
202.5	< 10		< 10		< 10	< 10	
210.1	10		< 10		< 10	< 10	
211	30		< 10		< 10	< 10	
300.1	< 10		**223**	< 10	< 10	< 10	19
301.1	**1607**	< 10	**226**	< 10	10	10	39
301.2	< 10		< 10		< 10	< 10	
320	< 10		63		< 10	10	

Table 4. Beaches/Stations/Rainfall

Beaches	Stations
Crissy Field	202.4, 202.5
Aquatic Park	210.1, 211
Candlestick Point State Recreation Area	300.1, 301.1, 301.2
Islais Creek	320

Rainfall (in.)	
04/08	0.17
04/09	0.45
04/10	0.05
04/14	0.14
04/22	0.52
04/27	0.13

STATION POSTED due to elevated bacteria count

STATION POSTED due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)

[2]Geometric means calculated for 5 or more samples per 30-day period.

Reviewed by: R Duggan

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Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Mon/03	Wed/05	Thu/06	Fri/07	Sat/08	Sun/09	Mon/10	Tue/11	Wed/12	Thu/13	Fri/14	Sat/15	Sun/16	Mon/17
202.4	75			181			98							520
202.5	< 10			85			161							313
210.1	148			211			145							197
211	85			1720	262		359							262
300.1	135						**< 24196**	3255	**11199**	3873	341	706		85
301.1	2595						1274							1918
301.2	279						4352	213						218
320	313	435	160	**> 24196**	**> 24196**	2098	4106	1145	1048	393	2046	20	565	605

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥400** MPN/100 mL[1]

Location	Mon/03	Wed/05	Thu/06	Fri/07	Sat/08	Sun/09	Mon/10	Tue/11	Wed/12	Thu/13	Fri/14	Sat/15	Sun/16	Mon/17
202.4	< 10			20			10							62
202.5	< 10			< 10			20							< 10
210.1	20			52			< 10							20
211	52			175	20		146							41
300.1	10						**4611**	109	**857**	185	30	10		20
301.1	41						31							109
301.2	41						**987**	51						< 10
320	41	109	20	**> 24196**	**6131**	135	146	199	104	20	231	< 10	52	52

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Mon/03	Wed/05	Thu/06	Fri/07	Sat/08	Sun/09	Mon/10	Tue/11	Wed/12	Thu/13	Fri/14	Sat/15	Sun/16	Mon/17
202.4	< 10			41			< 10							< 10
202.5	< 10			< 10			< 10							< 10
210.1	10			10			10							10
211	< 10			**323**	10		< 10							10
300.1	10						**8164**	**246**	**1259**	**187**	**201**	< 10		< 10
301.1	41						20							10
301.2	< 10						**759**	41						31
320	< 10	< 10	< 10	**19863**	**142**	< 10	20	20	< 20	10	10	< 10	20	63

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)	
Crissy Field	202.4, 202.5	04/06 0.92	04/12 0.15
Aquatic Park	210.1, 211	04/07 0.18	04/13 0.04
Candlestick Point	300.1, 301.1, 301.2	04/08 0.12	04/16 0.20
State Recreation Area		04/11 0.16	04/17 0.27
Islais Creek	320		

STATION POSTED due to elevated bacteria count

STATION POSTED due to Combined Sewer Discharge

STATION POSTED as a precautionary measure due to minor treated effluent leak at Pier 80

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)

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Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Tue/18	Wed/19	Thu/20	Fri/21	Sat/22	Sun/23	Mon/24	Tue/25	Wed/26	Thu/27	Fri/28	Sat/29	Sun/30	30-day Geometric Mean[2]
202.4							52							129
202.5							31							67
210.1							85							150
211							41							230
300.1							384							1154
301.1							121							
301.2							< 10							224
320	272	213	327	175	272	85	122	146	122	52	1153	448	455	471

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥400** MPN/100 mL[1]

Location	Tue/18	Wed/19	Thu/20	Fri/21	Sat/22	Sun/23	Mon/24	Tue/25	Wed/26	Thu/27	Fri/28	Sat/29	Sun/30	30-day Geometric Mean[2]
202.4							< 10							17
202.5							< 10							11
210.1							10							18
211							< 10							47
300.1							52							86
301.1							< 10							
301.2							< 10							46
320	31	31	31	41	10	10	20	< 10	20	< 10	85	< 10	52	56

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Tue/18	Wed/19	Thu/20	Fri/21	Sat/22	Sun/23	Mon/24	Tue/25	Wed/26	Thu/27	Fri/28	Sat/29	Sun/30	30-day Geometric Mean[2]
202.4							< 10							13
202.5							< 10							10
210.1							< 10							10
211							10							18
300.1							< 10							99
301.1							30							
301.2							< 10							40
320	10	< 10	< 10	< 10	< 10	< 10	20	< 10	10	< 10	< 10	10	< 10	18

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)
Crissy Field	202.4, 202.5	04/18 0.03
Aquatic Park	210.1, 211	04/19 0.14
Candlestick Point	300.1, 301.1, 301.2	04/20 0.01
State Recreation Area		04/26 0.03
Islais Creek	320	

STATION POSTED due to elevated bacteria count
STATION POSTED due to Combined Sewer Discharge
STATION POSTED as a precautionary measure due to minor treated effluent leak at Pier 80

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)

[2]Geometric means calculated for 5 or more samples per 30-day period.

Reviewed by: R Duggan

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Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Mon/02	Fri/06	Sat/07	Sun/08	Mon/09	Tue/10	Wed/11	Thu/12
202.4	< 10		**11199**	121	97			
202.5	31		3654	309	243			
210.1	72		3076		158			
211	41		4611		148			
220	86	**> 24196**	**> 24196**	3448	2613			
300.1	63		3255	1793	31			
301.1	1872		**> 24196**	**> 24196**	**> 24196**	**15531**	**> 24196**	**> 24196**
301.2	< 10		*	97	63			
320	109		**> 24196**	**> 24196**	1850			

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥400** MPN/100 mL[1]

Location	Mon/02	Fri/06	Sat/07	Sun/08	Mon/09	Tue/10	Wed/11	Thu/12
202.4	< 10		**663**	10	10			
202.5	< 10		**712**	10	< 10			
210.1	< 10		389		10			
211	41		309		41			
220	20	**> 24196**	**> 24196**	118	169			
300.1	< 10		148	41	< 10			
301.1	10		**1086**	**763**	**683**	41	187	41
301.2	< 10		*	10	< 10			
320	20		**15531**	**3873**	110			

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Mon/02	Fri/06	Sat/07	Sun/08	Mon/09	Tue/10	Wed/11	Thu/12
202.4	< 10		**211**	10	< 10			
202.5	< 10		63	< 10	< 10			
210.1	10		< 10		10			
211	20		20		10			
220	< 10	**> 24196**	**2142**	10	10			
300.1	10		**285**	10	10			
301.1	< 10		**4106**	**537**	**1624**	31	**17329**	82
301.2	10		*	< 10	< 10			
320	< 10		**1515**	63	10			

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)
Crissy Field	202.4, 202.5	04/05 0.12
Aquatic Park	210.1, 211	04/06 2.02
Mission Creek	220	04/07 1.02
Candlestick Point State Recreation Area	300.1, 301.1, 301.2	04/11 0.12
Islais Creek	320	

STATION POSTED due to elevated bacteria count

STATION POSTED due to Combined Sewer Discharge

* Station sampled the next day due to flooded roads

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)

[2]Geometric means calculated for 5 or more samples per 30-day period.

Appendix O-TL2

City and County of San Francisco
SFPUC Wastewater Enterprise
Monthly Bay Shoreline Bacteriological Report
April 2018 cont.

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Fri/13	Sat/14	Sun/15	Mon/16	Tue/17	Mon/23	Tue/24	30-day Geometric Mean[2]
202.4				905		20		170
202.5				5794	< 10	31		205
210.1				< 10		132		136
211				20		98		141
220				776		175		1802
300.1				1050		495		425
301.1	**24196**	**14136**	**> 24196**	**24196**	1515	1607	185	8967
301.2				20		20		30
320				4106	< 10	98		899

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥400** MPN/100 mL[1]

Location	Fri/13	Sat/14	Sun/15	Mon/16	Tue/17	Mon/23	Tue/24	30-day Geometric Mean[2]
202.4				52		10		26
202.5				282	< 10	10		30
210.1				< 10		10		21
211				10		20		40
220				121		20		344
300.1				30		218		40
301.1	74	10	10	41	10	161	< 10	60
301.2				< 10		< 10		10
320				**816**	< 10	10		195

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Fri/13	Sat/14	Sun/15	Mon/16	Tue/17	Mon/23	Tue/24	30-day Geometric Mean[2]
202.4				98		< 10		24
202.5				**171**	< 10	< 10		20
210.1				< 10		< 10		10
211				31		< 10		17
220				63		< 10		85
300.1				< 10		41		22
301.1	< 10	< 10	**108**	**175**	10	**161**	31	121
301.2				10		< 10		10
320				10	< 10	< 10		27

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)
Crissy Field	202.4, 202.5	04/15 0.07
Aquatic Park	210.1, 211	04/16 0.27
Mission Creek	220	
Candlestick Point State Recreation Area	300.1, 301.1, 301.2	
Islais Creek	320	

STATION POSTED due to elevated bacteria count
STATION POSTED due to Combined Sewer Discharge
* Station sampled the next day due to flooded roads

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)
[2]Geometric means calculated for 5 or more samples per 30-day period.

Reviewed by: R Duggan

City and County of San Francisco
SFPUC Wastewater Enterprise
Monthly Bay Shoreline Bacteriological Report
May 2016

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Mon/02	Mon/09	Mon/10	Mon/16	Mon/23	Tue/31	30-day Geometric Mean[2]
202.4	< 10	120	30	< 10	110	10	27
202.5	51	161		< 10	31	20	35
210.1	75	< 10		75	< 10	20	26
211	282	< 10		10	833	86	73
300.1	10	218		31	631	262	102
301.1	1918	171		3076	135	2359	797
301.2	10	10		10	< 10	209	18
320	74	63		74	203	41	78

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥400** MPN/100 mL[1]

Location	Mon/02	Mon/09	Mon/10	Mon/16	Mon/23	Tue/31	30-day Geometric Mean[2]
202.4	< 10	41	10	< 10	86	10	18
202.5	< 10	63		< 10	10	10	14
210.1	10	< 10		< 10	< 10	10	10
211	20	< 10		< 10	228	< 10	21
300.1	< 10	63		< 10	135	63	35
301.1	183	41		< 10	10	41	31
301.2	10	< 10		< 10	< 10	209	18
320	10	20		41	52	10	21

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Mon/02	Mon/09	Mon/10	Mon/16	Mon/23	Tue/31	30-day Geometric Mean[2]
202.4	10	**1198**	63	10	20	20	38
202.5	< 10	20		< 10	10	< 10	11
210.1	< 10	< 10		< 10	< 10	< 10	10
211	31	< 10		< 10	< 10	< 10	13
300.1	< 10	41		< 10	< 10	< 10	13
301.1	< 10	10		10	< 10	41	13
301.2	10	10		< 10	< 10	20	11
320	10	< 10		20	< 10	< 10	11

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)
Crissy Field	202.4, 202.5	05/06 0.08
Aquatic Park	210.1, 211	05/07 0.07
Candlestick Point State Recreation Area	300.1, 301.1, 301.2	
Islais Creek	320	

STATION POSTED due to elevated bacteria count
STATION POSTED due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)
[2]Geometric means calculated for 5 or more samples per 30-day period.

Reviewed by: RDuggan

City and County of San Francisco
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May 2017

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Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Mon/01	Mon/08	Mon/15	Mon/22	Tue/23	Tue/30	30-day Geometric Mean[2]
202.4	10	10	20	187		31	26
202.5	52	< 10	31	52		52	34
210.1	41	52	< 10	233		10	35
211	161	10	10	41		41	31
300.1	369	175	169	554		201	261
301.1	31	1198	1793	**> 24196**	399	3255	1131
301.2	63	110	63	41		10	45
320	97	233	504	52		435	192

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥400** MPN/100 mL[1]

Location	Mon/01	Mon/08	Mon/15	Mon/22	Tue/23	Tue/30	30-day Geometric Mean[2]
202.4	< 10	< 10	10	10		10	10
202.5	< 10	< 10	< 10	10		< 10	10
210.1	10	< 10	< 10	52		10	14
211	20	< 10	< 10	20		10	13
300.1	52	110	52	< 10		20	36
301.1	10	20	10	10	63	52	20
301.2	< 10	< 10	10	10		10	10
320	20	< 10	52	< 10		30	20

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Mon/01	Mon/08	Mon/15	Mon/22	Tue/23	Tue/30	30-day Geometric Mean[2]
202.4	< 10	< 10	10	10		10	10
202.5	< 10	< 10	< 10	< 10		< 10	10
210.1	< 10	< 10	< 10	10		< 10	10
211	10	< 10	< 10	< 10		< 10	10
300.1	10	< 10	< 10	20		31	14
301.1	< 10	10	< 10	10	10	< 10	10
301.2	< 10	< 10	< 10	< 10		20	11
320	< 10	10	10	< 10		20	11

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)
Crissy Field	202.4, 202.5	None
Aquatic Park	210.1, 211	
Candlestick Point State Recreation Area	300.1, 301.1, 301.2	
Islais Creek	320	

STATION POSTED due to elevated bacteria count

STATION POSTED due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)

[2]Geometric means calculated for 5 or more samples per 30-day period.

Reviewed by: R. Duggan

City and County of San Francisco
SFPUC Wastewater Enterprise
Monthly Bay Shoreline Bacteriological Report
June 2016

Appendix O-TL2

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Mon/06	Mon/13	Mon/20	Tue/21	Wed/22	Thu/23	Fri/24	Sat/25	Sun/26	Mon/27	Tue/28	Wed/29	Thu/30	30-day Geometric Mean[2]
202.4	< 10	< 10	86							< 10				
202.5	< 10	1956	20							20				
210.1	< 10	85	10							110				
211	171	31	4611							63				
300.1	288	52	63							52				
301.1	131	298	187							2755				
301.2	< 10	121	< 10							187				
320	10	368	135	31	20	98	121	262	171	197	30	96	62	80

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥400** MPN/100 mL[1]

Location	Mon/06	Mon/13	Mon/20	Tue/21	Wed/22	Thu/23	Fri/24	Sat/25	Sun/26	Mon/27	Tue/28	Wed/29	Thu/30	30-day Geometric Mean[2]
202.4	< 10	< 10	41							< 10				
202.5	< 10	10	< 10							< 10				
210.1	< 10	41	< 10							< 10				
211	84	10	31							< 10				
300.1	108	10	20							10				
301.1	20	63	10							31				
301.2	< 10	< 10	< 10							20				
320	10	52	10	10	10	< 10	10	10	< 10	10	< 10	20	20	13

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Mon/06	Mon/13	Mon/20	Tue/21	Wed/22	Thu/23	Fri/24	Sat/25	Sun/26	Mon/27	Tue/28	Wed/29	Thu/30	30-day Geometric Mean[2]
202.4	< 10	41	20							< 10				
202.5	< 10	< 10	10							10				
210.1	< 10	10	< 10							< 10				
211	< 10	< 10	< 10							< 10				
300.1	10	< 10	< 10							20				
301.1	20	10	10							52				
301.2	10	< 10	< 10							< 10				
320	< 10	< 10	10	< 10	< 10	< 10	< 10	< 10	10	< 10	< 10	< 10	< 10	10

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)
Crissy Field	202.4, 202.5	None
Aquatic Park	210.1, 211	
Candlestick Point State Recreation Area	300.1, 301.1, 301.2	
Islais Creek	320	

STATION POSTED due to elevated bacteria count
STATION POSTED due to Combined Sewer Discharge
STATION POSTED as a precautionary measure due to minor treated effluent leak under Pier 80

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)
[2]Geometric means calculated for 5 or more samples per 30-day period.

Reviewed by: R Duggan

City and County of San Francisco
SFPUC Wastewater Enterprise
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June 2017

Appendix O-TL2

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Mon/05	Tue/06	Mon/12	Mon/19	Mon/26	30-day Geometric Mean[2]
202.4	20		31	41	1198	
202.5	20		31	41	41	
210.1	41		41	63	97	
211	20		31	63	110	
300.1	146		620	10	10	
301.1	733		98	185	41	
301.2	1314	< 10	< 10	41	10	35
320	10		359	20	10	

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥400** MPN/100 mL[1]

Location	Mon/05	Tue/06	Mon/12	Mon/19	Mon/26	30-day Geometric Mean[2]
202.4	10		< 10	< 10	86	
202.5	< 10		< 10	< 10	< 10	
210.1	< 10		< 10	41	75	
211	10		< 10	20	63	
300.1	< 10		10	< 10	< 10	
301.1	171		< 10	41	10	
301.2	**1314**	< 10	< 10	10	< 10	27
320	< 10		63	< 10	< 10	

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Mon/05	Tue/06	Mon/12	Mon/19	Mon/26	30-day Geometric Mean[2]
202.4	< 10		< 10	< 10	< 10	
202.5	< 10		< 10	< 10	10	
210.1	10		< 10	10	10	
211	< 10		< 10	20	20	
300.1	< 10		20	< 10	< 10	
301.1	< 10		< 10	10	< 10	
301.2	< 10	< 10	< 10	< 10	< 10	10
320	< 10		< 10	< 10	< 10	

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)
Crissy Field	202.4, 202.5	06/08 0.1
Aquatic Park	210.1, 211	
Candlestick Point State Recreation Area	300.1, 301.1, 301.2	
Islais Creek	320	

STATION POSTED due to elevated bacteria count

STATION POSTED due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)

[2]Geometric means calculated for 5 or more samples per 30-day period.

Reviewed by: R Duggan

City and County of San Francisco
SFPUC Wastewater Enterprise
Monthly Bay Shoreline Bacteriological Report
July 2016

Appendix O-TL2

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Fri/01	Sat/02	Sun/03	Mon/04	Tue/05	Wed/06	Thu/07	Fri/08	Sat/09	Sun/10	Mon/11
202.4					52						20
202.5					< 10						< 10
210.1					< 10						201
211					< 10						86
300.1					173						134
301.1					52						84
301.2					86						41
320	10	< 10	31	30	52	20	134	63	75	52	857

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥400** MPN/100 mL[1]

Location	Fri/01	Sat/02	Sun/03	Mon/04	Tue/05	Wed/06	Thu/07	Fri/08	Sat/09	Sun/10	Mon/11
202.4					20						< 10
202.5					< 10						< 10
210.1					< 10						< 10
211					< 10						< 10
300.1					122						31
301.1					< 10						10
301.2					31						10
320	< 10	< 10	< 10	< 10	10	10	20	< 10	< 10	10	10

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Fri/01	Sat/02	Sun/03	Mon/04	Tue/05	Wed/06	Thu/07	Fri/08	Sat/09	Sun/10	Mon/11
202.4					41						< 10
202.5					< 10						< 10
210.1					< 10						< 10
211					< 10						< 10
300.1					< 10						30
301.1					< 10						< 10
301.2					10						< 10
320	< 10	< 10	< 10	< 10	< 10	< 10	< 10	10	< 10	< 10	10

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)
Crissy Field	202.4, 202.5	07/08 0.02
Aquatic Park	210.1, 211	
Candlestick Point State Recreation Area	300.1, 301.1, 301.2	
Islais Creek	320	

STATION POSTED due to elevated bacteria count
STATION POSTED due to Combined Sewer Discharge
STATION POSTED as a precautionary measure due to minor treated effluent leak under Pier 80

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)
[2]Geometric means calculated for 5 or more samples per 30-day period.

City and County of San Francisco
SFPUC Wastewater Enterprise
Monthly Bay Shoreline Bacteriological Report
July 2016 (Cont.)

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Tue/12	Wed/13	Thu/14	Fri/15	Sat/16	Sun/17	Mon/18	Tue/19	Mon/25	30-day Geometric Mean[2]
202.4							31		10	
202.5							20		< 10	
210.1							< 10		20	
211							20		75	
300.1							120		75	
301.1							52		336	
301.2							10		161	
320	110	41	374	75	31	20	10	199	364	52

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥400** MPN/100 mL[1]

Location	Tue/12	Wed/13	Thu/14	Fri/15	Sat/16	Sun/17	Mon/18	Tue/19	Mon/25	30-day Geometric Mean[2]
202.4							< 10		10	
202.5							< 10		< 10	
210.1							< 10		10	
211							10		< 10	
300.1							30		31	
301.1							< 10		10	
301.2							10		52	
320	41	31	< 10	31	10	< 10	< 10	< 10	41	13

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Tue/12	Wed/13	Thu/14	Fri/15	Sat/16	Sun/17	Mon/18	Tue/19	Mon/25	30-day Geometric Mean[2]
202.4							< 10		< 10	
202.5							< 10		< 10	
210.1							< 10		< 10	
211							< 10		< 10	
300.1							< 10		52	
301.1							10		< 10	
301.2							< 10		20	
320	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	10

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)
Crissy Field	202.4, 202.5	None
Aquatic Park	210.1, 211	
Candlestick Point State Recreation Area	300.1, 301.1, 301.2	
Islais Creek	320	

STATION POSTED due to elevated bacteria count
STATION POSTED due to Combined Sewer Discharge
STATION POSTED as a precautionary measure due to minor treated effluent leak under Pier 80

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)
[2]Geometric means calculated for 5 or more samples per 30-day period.

Reviewed by: R Duggan

City and County of San Francisco
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Appendix O-TL2

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Wed/05	Mon/10	Mon/17	Mon/24	Mon/31	30-day Geometric Mean[2]
202.4	30	41	63	173	20	48
202.5	86	41	10	119	122	55
210.1	< 10	10	86	20	109	28
211	41	31	41	233	121	68
300.1	160	292	146	85	98	142
301.1	10	10	31	110	110	33
301.2	749	10	20	41	41	48
320	121	528	132	74	145	155

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥400** MPN/100 mL[1]

Location	Wed/05	Mon/10	Mon/17	Mon/24	Mon/31	30-day Geometric Mean[2]
202.4	10	< 10	10	31	< 10	13
202.5	20	< 10	< 10	< 10	63	17
210.1	< 10	< 10	10	10	41	13
211	10	< 10	< 10	189	85	28
300.1	98	199	41	31	31	60
301.1	< 10	< 10	10	31	63	18
301.2	175	10	< 10	10	10	18
320	31	20	10	< 10	10	14

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Wed/05	Mon/10	Mon/17	Mon/24	Mon/31	30-day Geometric Mean[2]
202.4	< 10	< 10	10	20	< 10	11
202.5	31	< 10	< 10	< 10	< 10	13
210.1	< 10	< 10	< 10	10	30	12
211	20	< 10	< 10	10	< 10	11
300.1	< 10	52	< 10	10	10	14
301.1	< 10	< 10	< 10	< 10	10	10
301.2	20	< 10	10	10	< 10	11
320	< 10	< 10	< 10	< 10	< 10	10

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)
Crissy Field	202.4, 202.5	None
Aquatic Park	210.1, 211	
Candlestick Point State Recreation Area	300.1, 301.1, 301.2	
Islais Creek	320	

STATION POSTED due to elevated bacteria count

STATION POSTED due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)

[2]Geometric means calculated for 5 or more samples per 30-day period.

Reviewed by: R Duggan

City and County of San Francisco
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August 2016

Appendix O-TL2

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Mon/01	Tue/02	Mon/08	Mon/15	Tue/16	Mon/22	Mon/29	30-day Geometric Mean[2]
202.4	< 10		20	160		74	84	46
202.5	< 10		2489	204		52	10	77
210.1	10		10	< 10		30	20	14
211	259		663	663	73	20	161	173
300.1	959	132	171	836		213	663	370
301.1	2755		1198	1203		336	158	732
301.2	243		221	41		121	30	96
320	75		631	20		243	488	162

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥400** MPN/100 mL[1]

Location	Mon/01	Tue/02	Mon/08	Mon/15	Tue/16	Mon/22	Mon/29	30-day Geometric Mean[2]
202.4	< 10		< 10	30		10	41	17
202.5	< 10		< 10	< 10		41	< 10	13
210.1	< 10		10	< 10		10	10	10
211	110		20	**548**	< 10	< 10	122	49
300.1	**538**	20	30	262		31	285	95
301.1	52		41	63		10	20	31
301.2	109		144	20		121	20	60
320	< 10		10	< 10		31	119	21

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Mon/01	Tue/02	Mon/08	Mon/15	Tue/16	Mon/22	Mon/29	30-day Geometric Mean[2]
202.4	< 10		< 10	52		10	41	18
202.5	< 10		< 10	< 10		< 10	10	10
210.1	< 10		< 10	< 10		< 10	< 10	10
211	10		10	**471**	10	< 10	20	21
300.1	**680**	10	10	74		< 10	< 10	28
301.1	< 10		10	31		10	20	14
301.2	20		10	< 10		30	10	14
320	< 10		10	< 10		< 10	< 10	10

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)
Crissy Field	202.4, 202.5	08/05 0.02
Aquatic Park	210.1, 211	
Candlestick Point State Recreation Area	300.1, 301.1, 301.2	
Islais Creek	320	

STATION POSTED due to elevated bacteria count

STATION POSTED due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)

[2]Geometric means calculated for 5 or more samples per 30-day period.

Reviewed by: R Duggan

City and County of San Francisco
SFPUC Wastewater Enterprise
Monthly Bay Shoreline Bacteriological Report
August 2017

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Mon/07	Mon/14	Mon/21	Mon/28	30-day Geometric Mean[2]
202.4	41	146	10	63	
202.5	20	41	282	10	
210.1	331	520	767	120	
211	20	256	809	275	
300.1	52	31	733	41	
301.1	199	98	86	30	
301.2	31	10	31	20	
320	75	437	20	134	

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥400** MPN/100 mL[1]

Location	Mon/07	Mon/14	Mon/21	Mon/28	30-day Geometric Mean[2]
202.4	20	85	< 10	10	
202.5	20	10	122	< 10	
210.1	122	63	122	41	
211	< 10	75	345	75	
300.1	< 10	20	374	< 10	
301.1	41	75	31	10	
301.2	31	10	10	10	
320	< 10	108	10	10	

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Mon/07	Mon/14	Mon/21	Mon/28	30-day Geometric Mean[2]
202.4	10	10	20	< 10	
202.5	< 10	10	< 10	< 10	
210.1	10	< 10	31	< 10	
211	< 10	52	20	10	
300.1	20	10	85	< 10	
301.1	31	10	86	< 10	
301.2	< 10	20	20	10	
320	< 10	< 10	10	< 10	

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)
Crissy Field	202.4, 202.5	None
Aquatic Park	210.1, 211	
Candlestick Point State Recreation Area	300.1, 301.1, 301.2	
Islais Creek	320	

STATION POSTED due to elevated bacteria count

STATION POSTED due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)

[2]Geometric means calculated for 5 or more samples per 30-day period.

Reviewed by: R Duggan

City and County of San Francisco
SFPUC Wastewater Enterprise
Monthly Bay Shoreline Bacteriological Report
September 2016

Appendix O-TL2

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Tue/06	Mon/12	Mon/19	Tue/20	Wed/21	Thu/22	Mon/26	Tue/27	30-day Geometric Mean[2]
202.4	20	< 10	< 10				31		
202.5	< 10	20	< 10				20		
210.1	20	< 10	20				10		
211	10	52	160				10		
300.1	432	259	4611				336		
301.1	3448	121	**10462**	**14136**	**19863**	1095	**> 24196**	2987	4201
301.2	< 10	63	109	10			146		40
320	683	156	31				20		

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥400** MPN/100 mL[1]

Location	Tue/06	Mon/12	Mon/19	Tue/20	Wed/21	Thu/22	Mon/26	Tue/27	30-day Geometric Mean[2]
202.4	10	< 10	< 10				< 10		
202.5	< 10	10	< 10				20		
210.1	10	< 10	10				< 10		
211	< 10	< 10	52				< 10		
300.1	52	85	30				86		
301.1	86	52	52	< 10	295	10	< 10	20	33
301.2	< 10	41	75	10			10		20
320	20	20	10				10		

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Tue/06	Mon/12	Mon/19	Tue/20	Wed/21	Thu/22	Mon/26	Tue/27	30-day Geometric Mean[2]
202.4	< 10	< 10	< 10				30		
202.5	< 10	< 10	< 10				< 10		
210.1	< 10	< 10	< 10				< 10		
211	< 10	< 10	30				< 10		
300.1	< 10	10	10				31		
301.1	75	< 10	10	10	30	< 10	< 10	< 10	15
301.2	10	< 10	**109**	< 10			< 10		16
320	< 10	< 10	< 10				10		

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)
Crissy Field	202.4, 202.5	None
Aquatic Park	210.1, 211	
Candlestick Point State Recreation Area	300.1, 301.1, 301.2	
Islais Creek	320	

STATION POSTED due to elevated bacteria count

STATION POSTED due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)

[2]Geometric means calculated for 5 or more samples per 30-day period.

Reviewed by: R. Duggan

City and County of San Francisco
SFPUC Wastewater Enterprise
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September 2017

Appendix O-TL2

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Tue/05	Mon/11	Thu/14	Mon/18	Mon/25	30-day Geometric Mean[2]
202.4	135	110		86	< 10	
202.5	156	52		52	41	
210.1	108	85		31	199	
211	183	135		122	269	
300.1	63	496		228	294	
301.1	97	199		183	20	
301.2	122	63		75	10	
320	160	211	*	31	41	

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥400** MPN/100 mL[1]

Location	Tue/05	Mon/11	Thu/14	Mon/18	Mon/25	30-day Geometric Mean[2]
202.4	86	31		75	< 10	
202.5	63	< 10		< 10	< 10	
210.1	63	10		10	20	
211	74	41		63	63	
300.1	20	132		108	195	
301.1	20	74		110	10	
301.2	86	< 10		31	< 10	
320	20	20	*	< 10	10	

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Tue/05	Mon/11	Thu/14	Mon/18	Mon/25	30-day Geometric Mean[2]
202.4	< 10	< 10		< 10	< 10	
202.5	41	< 10		10	< 10	
210.1	< 10	< 10		< 10	< 10	
211	20	< 10		20	< 10	
300.1	< 10	41		75	31	
301.1	< 10	< 10		10	< 10	
301.2	20	10		< 10	20	
320	< 10	< 10	*	10	10	

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)
Crissy Field	202.4, 202.5	09/11 0.13
Aquatic Park	210.1, 211	
Candlestick Point State Recreation Area	300.1, 301.1, 301.2	
Islais Creek	320	

STATION POSTED due to elevated bacteria count
STATION POSTED due to Combined Sewer Discharge
* STATION POSTED due to unauthorized treated wastewater discharge from Tulare Park

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)
[2]Geometric means calculated for 5 or more samples per 30-day period.

Reviewed by: R Duggan

City and County of San Francisco
SFPUC Wastewater Enterprise
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October 2016

Appendix O-TL2

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Mon/03	Tue/11	Sun/16	Mon/17	Tue/18	Wed/19	Thu/20	Mon/24	Tue/25	Wed/26	Fri/28	Sat/29	Sun/30	Mon/31	30-day Geometric Mean[2]
202.4	< 10	< 10		5475	216			< 10						98	70
202.5	10	41		4106				< 10						109	71
210.1	20	< 10		4106				10						31	48
211	10	< 10		3873	488			20						74	81
300.1	74	30		**12997**	2755			512						359	494
301.1	171	2924		7701	987			789	2723	465				384	1048
301.2	20	20		3873				118						480	154
320	63	345	**> 24196**	**> 24196**	**> 24196**	**17329**	1314	432			**> 24196**	**> 24196**	**> 24196**	4884	4937

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥400** MPN/100 mL[1]

Location	Mon/03	Tue/11	Sun/16	Mon/17	Tue/18	Wed/19	Thu/20	Mon/24	Tue/25	Wed/26	Fri/28	Sat/29	Sun/30	Mon/31	30-day Geometric Mean[2]
202.4	< 10	< 10		**464**	10			< 10						41	24
202.5	< 10	< 10		243				< 10						10	19
210.1	< 10	< 10		323				< 10						< 10	20
211	< 10	< 10		246	73			20						10	27
300.1	10	10		**839**	173			197						119	84
301.1	146	98		**627**	86			359	**1467**	63				63	189
301.2	< 10	10		203				51						187	45
320	30	30	**> 24196**	**> 24196**	**> 24196**	**1071**	109	20			**> 24196**	**19863**	**2909**	**435**	1273

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Mon/03	Tue/11	Sun/16	Mon/17	Tue/18	Wed/19	Thu/20	Mon/24	Tue/25	Wed/26	Fri/28	Sat/29	Sun/30	Mon/31	30-day Geometric Mean[2]
202.4	< 10	10		41	< 10			10						31	15
202.5	< 10	10		20				10						10	11
210.1	< 10	10		31				10						< 10	13
211	< 10	10		**160**	10			< 10						< 10	16
300.1	< 10	10		75	31			52						98	33
301.1	20	98		62	31			**243**	**279**	10				63	60
301.2	< 10	< 10		10				84						20	18
320	< 10	< 10	**> 24196**	**8664**	< 10	**148**	< 10	< 10			**> 24196**	**1198**	41	52	155

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)			
Crissy Field	202.4, 202.5	10/02	0.01	10/25	0.04
Aquatic Park	210.1, 211	10/03	0.01	10/27	0.51
Candlestick Point	300.1, 301.1, 301.2	10/14	0.35	10/28	0.28
State Recreation Area		10/15	0.24	10/29	0.01
Islais Creek	320	10/16	0.57	10/30	0.37
		10/24	0.03	10/31	0.01

STATION POSTED due to elevated bacteria count

STATION POSTED due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)

[2]Geometric means calculated for 5 or more samples per 30-day period.

Reviewed by: Rduggan

City and County of San Francisco
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Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Mon/02	Tue/03	Tue/10	Mon/16	Tue/17	Fri/20	Sat/21	Mon/23	Mon/30	Tue/31	30-day Geometric Mean[2]
202.4	< 10		10	30				10	110		20
202.5	20		10	20				20	41		20
210.1	63		275	10				135	110		76
211	185		471	31				683	109		182
220								63	109		
300.1	20		10	62				134	1274		73
301.1	20		20	**15531**	620			52	**19863**	1515	482
301.2	4352	10	20	10				< 10	448		58
320	97		571	228		**17329**	717	1178	74		542

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥400** MPN/100 mL[1]

Location	Mon/02	Tue/03	Tue/10	Mon/16	Tue/17	Fri/20	Sat/21	Mon/23	Mon/30	Tue/31	30-day Geometric Mean[2]
202.4	< 10		< 10	< 10				10	52		14
202.5	10		< 10	< 10				< 10	31		13
210.1	20		< 10	< 10				< 10	31		14
211	120		262	20				85	52		77
220								< 10	10		
300.1	20		10	10				85	246		33
301.1	10		< 10	**15531**	295			20	**12033**	**1223**	280
301.2	**3873**	10	10	< 10				< 10	185		44
320	52		52	41		31	41	84	< 10		38

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Mon/02	Tue/03	Tue/10	Mon/16	Tue/17	Fri/20	Sat/21	Mon/23	Mon/30	Tue/31	30-day Geometric Mean[2]
202.4	< 10		< 10	< 10				< 10	20		11
202.5	< 10		10	< 10				< 10	< 10		10
210.1	< 10		10	< 10				< 10	< 10		10
211	63		< 10	< 10				41	10		19
220								< 10	< 10		
300.1	< 10		10	< 10				10	10		10
301.1	10		< 10	**259**	20			10	**2909**	41	48
301.2	**496**	< 10	< 10	< 10				< 10	< 10		19
320	30		< 10	< 10		75	10	20	< 10		17

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)
Crissy Field	202.4, 202.5	10/19 0.07
Aquatic Park	210.1, 211	10/20 0.12
Mission Creek	220	
Candlestick Point State Recreation Area	300.1, 301.1, 301.2	
Islais Creek	320	

STATION POSTED due to elevated bacteria count

STATION POSTED due to Combined Sewer Discharge

STATION POSTED as a precautionary measure due to a power outage at Booster Pump Station that caused discharge of final effluent into Islais creek

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)

[2]Geometric means calculated for 5 or more samples per 30-day period.

Reviewed by: R Duggan

City and County of San Francisco
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Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Tue/01	Mon/07	Mon/14	Tue/15	Wed/16	Mon/21	Tue/22	Wed/23	Mon/28	30-day Geometric Mean[2]
202.4		< 10	241	31		96			216	69
202.5		10	85			187			< 10	
210.1		85	20			243			10	
211		161	670			97			20	
300.1		216	313	75		173			161	170
301.1		984	1178	988	52	211			41	283
301.2		20	9804	52		97			85	153
320	1374	228	86			8164	199 *	145 *	809	708

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥400** MPN/100 mL[1]

Location	Tue/01	Mon/07	Mon/14	Tue/15	Wed/16	Mon/21	Tue/22	Wed/23	Mon/28	30-day Geometric Mean[2]
202.4		< 10	20	< 10		< 10			10	11
202.5		< 10	10			41			< 10	
210.1		41	10			84			< 10	
211		75	315			41			< 10	
300.1		86	187	10		52			41	51
301.1		305	201	**487**	20	75			20	98
301.2		< 10	**8664**	31		10			20	56
320	135	52	< 10			**857**	< 10 *	< 10 *	63	82

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Tue/01	Mon/07	Mon/14	Tue/15	Wed/16	Mon/21	Tue/22	Wed/23	Mon/28	30-day Geometric Mean[2]
202.4		< 10	**158**	31		< 10			30	27
202.5		< 10	20			< 10			< 10	
210.1		< 10	10			< 10			< 10	
211		< 10	75			< 10			10	
300.1		86	**135**	10		20			75	44
301.1		84	**108**	**309**	10	41			< 10	48
301.2		10	**4611**	20		10			75	59
320	10	< 10	51			96	31 *	< 10 *	41	29

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)			
Crissy Field	202.4, 202.5	11/19	0.48	11/26	0.42
Aquatic Park	210.1, 211	11/20	0.50	11/27	0.11
Candlestick Point	300.1, 301.1, 301.2	11/22	0.50	11/28	0.09
State Recreation Area		11/23	0.04	11/30	0.07
Islais Creek	320				

STATION POSTED due to elevated bacteria count
STATION POSTED due to Combined Sewer Discharge
STATION POSTED due to potential of discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)
[2]Geometric means calculated for 5 or more samples per 30-day period.

Reviewed by: R Duggan

* Due to power outage and limited information; station posted because of the potential for a discharge.

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Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Thu/16	Fri/17	Sat/18	Sun/19	Mon/20	Tue/21	Mon/27	Tue/28	30-day Geometric Mean[2]
202.4	368				109	< 10	160		48
202.5	1376	644			52		20		81
210.1	631				20		228		73
211	594	218			63		1935	282	280
220	**> 24196**	**19863**	**11199**	691	404		2014		1208
300.1					119		146		304
301.1					1046		3654		4230
301.2					41		31		185
320	**> 24196**	**> 24196**	**> 24196**	**24196**	7270		987		3195

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥400** MPN/100 mL[1]

Location	Thu/16	Fri/17	Sat/18	Sun/19	Mon/20	Tue/21	Mon/27	Tue/28	30-day Geometric Mean[2]
202.4	31				< 10	< 10	31		15
202.5	135	20			< 10		10		17
210.1	120				< 10		31		26
211	85	10			31		**1860**	218	101
220	**> 24196**	**1106**	**771**	52	63		63		174
300.1					107		63		149
301.1					31		209		197
301.2					< 10		20		44
320	**> 24196**	**> 24196**	**9804**	383	171		31		430

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Thu/16	Fri/17	Sat/18	Sun/19	Mon/20	Tue/21	Mon/27	Tue/28	30-day Geometric Mean[2]
202.4	41				**364**	< 10	< 10		23
202.5	**120**	20			< 10		10		17
210.1	98				< 10		20		18
211	**121**	< 10			< 10		98	31	27
220	**24196**	**121**	41	10	< 10		41		51
300.1					73		31		52
301.1					31		96		95
301.2					< 10		< 10		42
320	**> 24196**	**19863**	**743**	< 10	72		41		179

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)
Crissy Field	202.4, 202.5	11/16 1.61
Aquatic Park	210.1, 211	11/26 0.23
Mission Creek	220	11/27 0.16
Candlestick Point State Recreation Area	300.1, 301.1, 301.2	11/28 0.01
Islais Creek	320	

STATION POSTED due to elevated bacteria count

STATION POSTED due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)

[2]Geometric means calculated for 5 or more samples per 30-day period.

Reviewed by: H. Peterson

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Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Mon/05	Thu/08	Fri/09	Sat/10	Sun/11	Mon/12	Tue/13	Wed/14	Thu/15	Fri/16	Sat/17	Sun/18
202.4	41					369			*	134		
202.5	10					201			*	285		
210.1	20					201			*	399		
211	122					399			*	305		
300.1	20					4106	408		*	1421	5794	3076
301.1	< 10					5794	1467		*	512	771	1483
301.2	63					4106	2064	480	1500	402	432	
320	148	**> 24196**	**> 24196**	**24196**	**> 24196**	**> 24196**	**> 24196**	1789	*	**> 24196**	**14136**	984

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥400** MPN/100 mL[1]

Location	Mon/05	Thu/08	Fri/09	Sat/10	Sun/11	Mon/12	Tue/13	Wed/14	Thu/15	Fri/16	Sat/17	Sun/18
202.4	< 10					262			*	41		
202.5	< 10					10			*	41		
210.1	10					31			*	74		
211	86					74			*	52		
300.1	10					**934**	144		*	**426**	**816**	**683**
301.1	< 10					**563**	86		*	75	84	84
301.2	41					**1187**	233	228	**480**	120	41	
320	31	**24196**	**> 24196**	**627**	**> 24196**	**> 24196**	**7270**	158	*	**> 24196**	**749**	107

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Mon/05	Thu/08	Fri/09	Sat/10	Sun/11	Mon/12	Tue/13	Wed/14	Thu/15	Fri/16	Sat/17	Sun/18
202.4	< 10					85			*	20		
202.5	< 10					31			*	20		
210.1	< 10					< 10			*	20		
211	10					41			*	31		
300.1	< 10					**1259**	63		*	**529**	**1421**	**4611**
301.1	< 10					**842**	52		*	**146**	**148**	86
301.2	< 10					**3654**	**243**	**173**	**2755**	**110**	41	
320	10	**4352**	**24196**	98	**> 24196**	**160**	20	31	*	**15531**	75	< 10

Table 4. Beaches/Stations/Rainfall

Beaches	Stations
Crissy Field	202.4, 202.5
Aquatic Park	210.1, 211
Candlestick Point State Recreation Area	300.1, 301.1, 301.2
Islais Creek	320

Rainfall (in.)	
12/07	0.34
12/08	0.76
12/09	0.11
12/10	0.75
12/13	0.04
12/14	0.04
12/15	1.11

STATION POSTED due to elevated bacteria count
STATION POSTED due to Combined Sewer Discharge
* STATION sampled next day due to safety concerns
STATION POSTED but no CSD occurred

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)
[2]Geometric means calculated for 5 or more samples per 30-day period.

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December 2016 (cont.)

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Mon/19	Tue/20	Wed/21	Fri/23	Sat/24	Sun/25	Tue/27	30-day Geometric Mean[2]
202.4	98			109			10	77
202.5	134			1317			97	146
210.1	98			63			243	116
211	74			31			85	119
300.1	383	373	74				20	422
301.1	2143	749					119	596
301.2	121						97	452
320	1081			**> 24196**	**> 24196**	6488	512	7054

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥400** MPN/100 mL[1]

Location	Mon/19	Tue/20	Wed/21	Fri/23	Sat/24	Sun/25	Tue/27	30-day Geometric Mean[2]
202.4	20			20			10	27
202.5	< 10			41			< 10	16
210.1	10			10			109	25
211	20			< 10			52	39
300.1	109	52	20				< 10	114
301.1	**1789**	86					10	90
301.2	20						< 10	102
320	74			**11199**	**> 24196**	359	10	1546

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Mon/19	Tue/20	Wed/21	Fri/23	Sat/24	Sun/25	Tue/27	30-day Geometric Mean[2]
202.4	< 10			52			< 10	21
202.5	10			41			< 10	17
210.1	< 10			20			20	14
211	< 10			10			10	15
300.1	**231**	**520**	52				< 10	211
301.1	10	20					< 10	49
301.2	< 10						10	107
320	30			**3076**	**4611**	31	< 10	258

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)
Crissy Field	202.4, 202.5	12/23 0.78
Aquatic Park	210.1, 211	
Candlestick Point State Recreation Area	300.1, 301.1, 301.2	
Islais Creek	320	

STATION POSTED due to elevated bacteria count
STATION POSTED due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)
[2]Geometric means calculated for 5 or more samples per 30-day period.

Reviewed by: R Duggan

Appendix O-TL2

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Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Mon/04	Mon/11	Mon/18	Tue/26	30-day Geometric Mean[2]
202.4	121	41	10	10	
202.5	63	52	10	30	
210.1	41	85	10	98	
211	31	41	20	86	
220	109	426	20	31	
300.1	62	110	41	30	
301.1	1450	857	98	315	
301.2	62	10	110	20	
320	75	448	63	160	

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥400** MPN/100 mL[1]

Location	Mon/04	Mon/11	Mon/18	Tue/26	30-day Geometric Mean[2]
202.4	110	20	< 10	< 10	
202.5	10	< 10	< 10	< 10	
210.1	< 10	10	< 10	< 10	
211	20	< 10	< 10	41	
220	52	31	< 10	< 10	
300.1	10	10	10	10	
301.1	41	97	31	41	
301.2	30	< 10	< 10	10	
320	52	20	< 10	41	

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Mon/04	Mon/11	Mon/18	Tue/26	30-day Geometric Mean[2]
202.4	10	< 10	20	< 10	
202.5	< 10	< 10	20	< 10	
210.1	< 10	< 10	< 10	10	
211	< 10	< 10	< 10	< 10	
220	10	10	10	< 10	
300.1	< 10	51	30	< 10	
301.1	< 10	41	20	20	
301.2	< 10	< 10	< 10	< 10	
320	10	20	< 10	< 10	

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)
Crissy Field	202.4, 202.5	12/02 0.02
Aquatic Park	210.1, 211	12/20 0.05
Mission Creek	220	
Candlestick Point State Recreation Area	300.1, 301.1, 301.2	
Islais Creek	320	

STATION POSTED due to elevated bacteria count

STATION POSTED due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)

[2]Geometric means calculated for 5 or more samples per 30-day period.

Reviewed by: R Duggan

City and County of San Francisco
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Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Sun/06	Mon/07	Tue/08	Wed/09	Thu/10	Fri/11	Sat/12	Sun/13	Mon/14	Tue/15	Wed/16	Thu/17
202.4		183							31			
202.5		231							63			
210.1		*							*			
211		638							122			
220	**> 24196**	**24196**	1515						216		**> 24196**	**> 24196**
300.1		2247	1607	2382	6867	1058	683	576	279			
301.1		1354	5172	1624	663				1376	3873	3654	2489
301.2		670							146			295
320	**> 24196**	**> 24196**	**> 24196**	**> 24196**	**> 24196**	839			350			**> 24196**

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥400** MPN/100 mL[1]

Location	Sun/06	Mon/07	Tue/08	Wed/09	Thu/10	Fri/11	Sat/12	Sun/13	Mon/14	Tue/15	Wed/16	Thu/17
202.4		51							10			
202.5		52							< 10			
210.1		*							*			
211		110							63			
220	**> 24196**	**6488**	169						10		**12033**	**> 24196**
300.1		285	233	**450**	**613**	369	187	216	31			
301.1		160	**565**	279	145				189	**1259**	**1043**	246
301.2		63							< 10			31
320	**> 24196**	**> 24196**	**> 24196**	**10462**	**2014**	86			52			**> 24196**

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Sun/06	Mon/07	Tue/08	Wed/09	Thu/10	Fri/11	Sat/12	Sun/13	Mon/14	Tue/15	Wed/16	Thu/17
202.4		10							10			
202.5		20							< 10			
210.1		*							*			
211		52							31			
220	**> 24196**	**1112**	10						< 10		**3654**	**> 24196**
300.1		**350**	**457**	**813**	**820**	**201**	**118**	96	52			
301.1		**285**	**1725**	**161**	75				**171**	**266**	**728**	**203**
301.2		75							10			10
320	**8164**	**> 24196**	**10462**	**272**	20	10			10			**> 24196**

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)			
Crissy Field	202.4, 202.5	01/05	0.19	01/14	0.01
Aquatic Park	210.1, 211	01/06	1.46	01/15	0.96
Mission Creek	220	01/09	0.19	01/16	1.19
Candlestick Point	300.1, 301.1, 301.2	01/10	0.01	01/17	1.22
State Recreation Area		01/11	0.29		
Islais Creek	320				

STATION POSTED due to elevated bacteria count

STATION POSTED due to Combined Sewer Discharge

* Station not accessible due to partial federal government shutdown

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)

[2]Geometric means calculated for 5 or more samples per 30-day period.

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Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Fri/18	Sat/19	Sun/20	Mon/21	Tue/22	Mon/28	Tue/29	Thu/31	30-day Geometric Mean[2]
202.4					31	30			
202.5					98	10			
210.1						**	20		
211					63	1565	86		231
220	**17329**	2481			751	63		**> 24196**	4101
300.1					20	30			577
301.1	**12997**	404			717	63			1450
301.2					10	63			113
320	**> 24196**	**> 24196**	**17329**	3076	3076	75			6769

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥400** MPN/100 mL[1]

Location	Fri/18	Sat/19	Sun/20	Mon/21	Tue/22	Mon/28	Tue/29	Thu/31	30-day Geometric Mean[2]
202.4					10	10			
202.5					< 10	10			
210.1						**	< 10		
211					31	**616**	31		84
220	**2755**	156			52	20		**2187**	791
300.1					< 10	< 10			124
301.1	63	< 10			146	10			156
301.2					< 10	20			21
320	**> 24196**	**2481**	**886**	122	86	10			1449

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Fri/18	Sat/19	Sun/20	Mon/21	Tue/22	Mon/28	Tue/29	Thu/31	30-day Geometric Mean[2]
202.4					20	10			
202.5					< 10	< 10			
210.1						**	< 10		
211					< 10	**359**	< 10		36
220	**457**	75			31	20		**144**	277
300.1					< 10	10			129
301.1	**246**	10			63	< 10			141
301.2					< 10	10			15
320	**15531**	**156**	**171**	75	30	< 10			338

Sampling/Posting issues
Hyde St Pier (210.1) not accessible due to partial govt. shutdown; sampled next day on 1/29 due to gate still locked

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)
Crissy Field	202.4, 202.5	01/20 0.20
Aquatic Park	210.1, 211	01/30 0.10
Mission Creek	220	01/31 0.57
Candlestick Point State Recreation Area	300.1, 301.1, 301.2	
Islais Creek	320	

STATION POSTED due to elevated bacteria count
STATION POSTED due to Combined Sewer Discharge
** Station sampled the next day due to locked gate

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)
[2]Geometric means calculated for 5 or more samples per 30-day period.

Reviewed by: R Duggan

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Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Wed/01	Mon/06	Tue/07	Wed/08	Mon/13	Thu/16	Fri/17	Sat/18
202.4		41			110	5794	712	85
202.5		86			52	3873	216	
210.1		74			20	63		
211		121			41	148		
220		75			359	**> 24196**	**24196**	**24196**
300.1	373	8164	2909	110	132			
301.1		298			51			
301.2		31			20			
320		1421			31	**> 24196**	**> 24196**	**> 24196**

Sampling/Posting issues
None

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥400** MPN/100 mL[1]

Location	Wed/01	Mon/06	Tue/07	Wed/08	Mon/13	Thu/16	Fri/17	Sat/18
202.4		31			31	**414**	75	20
202.5		52			20	52	63	
210.1		10			10	< 10		
211		10			30	10		
220		< 10			< 10	**> 24196**	**1679**	**404**
300.1	10	10	63	< 10	20			
301.1		< 10			< 10			
301.2		< 10			< 10			
320		85			10	**> 24196**	**> 24196**	**19863**

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Wed/01	Mon/06	Tue/07	Wed/08	Mon/13	Thu/16	Fri/17	Sat/18
202.4		52			41	**794**	**882**	20
202.5		< 10			< 10	**158**	20	
210.1		20			< 10	10		
211		10			< 10	41		
220		10			10	**17329**	**169**	63
300.1	85	**571**	**203**	10	< 10			
301.1		84			< 10			
301.2		< 10			< 10			
320		52			< 10	**> 24196**	**10462**	**3609**

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)			
Crissy Field	202.4, 202.5	01/07	0.01	01/12	0.01
Aquatic Park	210.1, 211	01/08	0.01	01/13	0.13
Mission Creek	220	01/09	0.25	01/14	0.02
Candlestick Point State Recreation Area	300.1, 301.1, 301.2	01/11	0.17	01/16	1.21
Islais Creek	320				

STATION POSTED due to elevated bacteria count

STATION POSTED due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)

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Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Sun/19	Mon/20	Tue/21	Wed/22	Thu/23	Mon/27	Tue/28
202.4			504	345	31	< 10	52
202.5			30			31	
210.1			52			52	
211			96			41	
220	**> 24196**	4611	1565			144	
300.1			488			298	
301.1			145			84	
301.2			355			960	
320	**> 24196**	5172	5475	594		2613	

Sampling/Posting issues
None

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥400** MPN/100 mL[1]

Location	Sun/19	Mon/20	Tue/21	Wed/22	Thu/23	Mon/27	Tue/28
202.4			97	109	10	< 10	< 10
202.5			< 10			< 10	
210.1			< 10			20	
211			31			< 10	
220	**521**	315	216			63	
300.1			63			< 10	
301.1			52			10	
301.2			10			86	
320	**6131**	148	75	31		31	

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Sun/19	Mon/20	Tue/21	Wed/22	Thu/23	Mon/27	Tue/28
202.4			**309**	**134**	10	**131**	< 10
202.5			< 10			< 10	
210.1			< 10			< 10	
211			20			10	
220	97	75	51			10	
300.1			52			10	
301.1			20			< 10	
301.2			31			10	
320	**228**	41	**199**	10		10	

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)
Crissy Field	202.4, 202.5	01/21 0.11
Aquatic Park	210.1, 211	01/26 0.21
Mission Creek	220	01/28 0.05
Candlestick Point State Recreation Area	300.1, 301.1, 301.2	
Islais Creek	320	

STATION POSTED due to elevated bacteria count

STATION POSTED due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)

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Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Fri/01	Mon/04	Tue/05	Mon/11	Wed/13	Thu/14	Fri/15	Sat/16
202.4		134		< 10	**24196**	**14136**	512	
202.5		2359		63	**24196**	2909	546	
210.1		122		109	327			
211		161		109	414			
220	1234	6867	31	121	**> 24196**	**> 24196**	**> 24196**	**> 24196**
300.1		323		97	**> 24196**	**> 24196**	2143	313
301.1		1236		20	1842	**> 24196**	2143	480
301.2		**10462**	63	30	1374	1725		
320		**> 24196**	1421	882	**> 24196**	**> 24196**	**> 24196**	**> 24196**

Sampling/Posting issues
Station 301.2 de-posted one day early in error (2/14)

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥400** MPN/100 mL[1]

Location	Fri/01	Mon/04	Tue/05	Mon/11	Wed/13	Thu/14	Fri/15	Sat/16
202.4		10		< 10	**990**	**677**	41	
202.5		63		10	**1500**	**428**	41	
210.1		10		10	97			
211		10		41	169			
220	144	**529**	< 10	20	**> 24196**	**> 24196**	**17329**	**2014**
300.1		20		41	**24196**	**4106**	256	52
301.1		10		10	327	**4611**	**464**	31
301.2		74	< 10	< 10	75	332		
320		74	135	10	**> 24196**	**> 24196**	**> 24196**	**1725**

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Fri/01	Mon/04	Tue/05	Mon/11	Wed/13	Thu/14	Fri/15	Sat/16
202.4		< 10		< 10	**441**	**1565**	20	
202.5		52		< 10	**1850**	**187**	30	
210.1		10		< 10	75			
211		41		< 10	96			
220	30	**262**	< 10	< 10	**> 24196**	**> 24196**	**1153**	63
300.1		< 10		31	**5475**	**3448**	**148**	20
301.1		52		< 10	**292**	**1374**	75	31
301.2		**784**	< 10	20	**279**	74		
320		63	10	20	**> 24196**	**12997**	**3130**	**185**

Table 4. Beaches/Stations/Rainfall

Beaches	Stations
Crissy Field	202.4, 202.5
Aquatic Park	210.1, 211
Mission Creek	220
Candlestick Point State Recreation Area	300.1, 301.1, 301.2
Islais Creek	320

Rainfall (in.)			
02/01	0.14	02/10	0.13
02/02	0.57	02/12	0.30
02/03	0.25	02/13	2.53
02/04	0.69	02/14	1.18
02/05	0.07	02/15	0.29
02/08	0.25	02/16	0.14
02/09	0.63		

STATION POSTED due to elevated bacteria count

STATION POSTED due to Combined Sewer Discharge

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[2]Geometric means calculated for 5 or more samples per 30-day period.

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Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Sun/17	Mon/18	Tue/19	Wed/20	Mon/25	Tue/26	Wed/27	Thu/28
202.4			96		31			
202.5			145		199			
210.1			98		275			
211			148		41			
220	5172	1314	908		185			
300.1			292		3448	1354	1785	309
301.1			880		644			
301.2			201		63			
320	6488		1785	384	2359	1918	**12997**	**> 24196**

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥400** MPN/100 mL[1]

Location	Sun/17	Mon/18	Tue/19	Wed/20	Mon/25	Tue/26	Wed/27	Thu/28
202.4			20		10			
202.5			10		10			
210.1			< 10		216			
211			10		< 10			
220	**670**	97	52		10			
300.1			31		**697**	146	309	63
301.1			20		173			
301.2			20		20			
320	199		**435**	41	74	173	**905**	**4611**

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Sun/17	Mon/18	Tue/19	Wed/20	Mon/25	Tue/26	Wed/27	Thu/28
202.4			10		75			
202.5			10		< 10			
210.1			< 10		10			
211			< 10		< 10			
220	52	30	20		20			
300.1			41		**305**	**201**	**285**	20
301.1			41		85			
301.2			10		52			
320	86		**231**	10	**108**	**189**	**272**	**546**

Sampling/Posting issues
None

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)
Crissy Field	202.4, 202.5	02/17 0.12
Aquatic Park	210.1, 211	02/25 0.04
Mission Creek	220	02/26 0.70
Candlestick Point State Recreation Area	300.1, 301.1, 301.2	02/27 0.64
Islais Creek	320	

STATION POSTED due to elevated bacteria count

STATION POSTED due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)

[2]Geometric means calculated for 5 or more samples per 30-day period.

Reviewed by: R Duggan

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Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Mon/03	Tue/04	Mon/10	Tue/18	Mon/24	Tue/25
202.4	31	20	< 10	< 10	135	
202.5	< 10		10	85	< 10	
210.1	63		75	135	< 10	
211	31		52	86	75	
220	109		10	41	63	
300.1	10		10	31	41	
301.1	201		10	10	41	
301.2	10		10	< 10	175	
320	399		199	181	**14136**	414

Sampling/Posting issues
None

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥400** MPN/100 mL[1]

Location	Mon/03	Tue/04	Mon/10	Tue/18	Mon/24	Tue/25
202.4	10	10	< 10	< 10	31	
202.5	< 10		< 10	10	< 10	
210.1	20		41	75	< 10	
211	20		41	52	31	
220	52		< 10	< 10	< 10	
300.1	< 10		< 10	< 10	31	
301.1	121		< 10	< 10	< 10	
301.2	< 10		< 10	< 10	20	
320	52		10	62	74	223

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Mon/03	Tue/04	Mon/10	Tue/18	Mon/24	Tue/25
202.4	**1515**	< 10	< 10	< 10	< 10	
202.5	< 10		< 10	< 10	< 10	
210.1	10		< 10	20	< 10	
211	10		< 10	< 10	20	
220	31		10	< 10	< 10	
300.1	< 10		< 10	52	< 10	
301.1	< 10		< 10	51	20	
301.2	10		< 10	< 10	10	
320	20		< 10	10	< 10	< 10

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)
Crissy Field	202.4, 202.5	None
Aquatic Park	210.1, 211	
Mission Creek	220	
Candlestick Point State Recreation Area	300.1, 301.1, 301.2	
Islais Creek	320	

STATION POSTED due to elevated bacteria count

STATION POSTED due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)

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March 2019

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Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Fri/01	Mon/04	Tue/05	Wed/06	Thu/07	Fri/08	Sat/09	Mon/11
202.4		213						134
202.5		262						109
210.1		160						75
211		213						74
220		1860		**> 24196**	5475	1616		160
300.1		1785	373					313
301.1		2142						1376
301.2		120						63
320	2909	471		**> 24196**	**> 24196**	**17329**	1515	1334

Sampling/Posting issues
None

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥400** MPN/100 mL[1]

Location	Fri/01	Mon/04	Tue/05	Wed/06	Thu/07	Fri/08	Sat/09	Mon/11
202.4		74						63
202.5		20						31
210.1		20						31
211		41						20
220		63		**> 24196**	**1956**	216		20
300.1		318	41					63
301.1		383						364
301.2		41						10
320	109	110		**> 24196**	**> 24196**	**987**	145	384

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Fri/01	Mon/04	Tue/05	Wed/06	Thu/07	Fri/08	Sat/09	Mon/11
202.4		84						20
202.5		20						20
210.1		< 10						20
211		31						10
220		86		**> 24196**	**279**	< 10		10
300.1		**175**	31					< 10
301.1		52						10
301.2		20						< 10
320	41	20		**> 24196**	**9208**	52	20	52

Table 4. Beaches/Stations/Rainfall

Beaches	Stations
Crissy Field	202.4, 202.5
Aquatic Park	210.1, 211
Mission Creek	220
Candlestick Point State Recreation Area	300.1, 301.1, 301.2
Islais Creek	320

Rainfall (in.)			
03/01	0.02	03/06	0.80
03/02	0.92	03/09	0.25
03/04	0.07	03/10	0.25
03/05	0.40		

STATION POSTED due to elevated bacteria count

STATION POSTED due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)

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Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Mon/18	Tue/19	Wed/20	Thu/21	Mon/25	Tue/26	Wed/27	Thu/28
202.4	504				10			
202.5	41				173			
210.1	1314				86			
211	820				121			
220	218		**> 24196**	218	231			
300.1	520				767	631	3873	512
301.1	**24196**	504			1376	512		
301.2	749	134			41			
320	450				5475			

Sampling/Posting issues
None

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥400** MPN/100 mL[1]

Location	Mon/18	Tue/19	Wed/20	Thu/21	Mon/25	Tue/26	Wed/27	Thu/28
202.4	359				< 10			
202.5	< 10				31			
210.1	197				20			
211	272				41			
220	41		**> 24196**	63	41			
300.1	158				146	155	**1396**	51
301.1	**24196**	97			233	20		
301.2	110	63			10			
320	41				292			

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Mon/18	Tue/19	Wed/20	Thu/21	Mon/25	Tue/26	Wed/27	Thu/28
202.4	30				10			
202.5	10				10			
210.1	20				10			
211	< 10				20			
220	< 10		**24196**	10	20			
300.1	20				**108**	**148**	**743**	10
301.1	**984**	63			**2909**	85		
301.2	**457**	10			< 10			
320	< 10				31			

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)			
Crissy Field	202.4, 202.5	03/20	0.86	03/26	0.13
Aquatic Park	210.1, 211	03/22	0.57	03/27	0.02
Mission Creek	220	03/23	0.13	03/28	0.02
Candlestick Point State Recreation Area	300.1, 301.1, 301.2	03/25	0.33	03/29	0.01
Islais Creek	320				

STATION POSTED due to elevated bacteria count

STATION POSTED due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)

Reviewed by: R Duggan

City and County of San Francisco
SFPUC Wastewater Enterprise
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Appendix O-TL2

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Mon/02	Tue/03	Mon/09	Tue/10	Wed/11	Mon/16	Tue/17	Mon/23	Mon/30
202.4	< 10		30			74		63	41
202.5	20		10			86		31	< 10
210.1	369		85			122		*	*
211	135		171			63		155	96
220	529		683			613		1354	771
300.1	426		3448			2495		4786	1541
301.1	3448		3282	359	3255	1510		4106	6131
301.2	530		591	3130		933	520	160	703
320	2755	448	457			**24196**	3076	4352	504

Sampling/Posting issues
Hyde St Pier (210.1) not accessible due to Covid-19 social distancing restrictions

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥400** MPN/100 mL[1]

Location	Mon/02	Tue/03	Mon/09	Tue/10	Wed/11	Mon/16	Tue/17	Mon/23	Mon/30
202.4	< 10		10			10		< 10	10
202.5	< 10		< 10			20		10	< 10
210.1	20		20			10		*	*
211	20		145			10		120	41
220	< 10		< 10			10		41	< 10
300.1	20		121			41		41	51
301.1	10		185	< 10	< 10	86		< 10	20
301.2	10		< 10	10		20	< 10	10	51
320	97	20	< 10			122	10	30	< 10

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Mon/02	Tue/03	Mon/09	Tue/10	Wed/11	Mon/16	Tue/17	Mon/23	Mon/30
202.4	< 10		< 10			10		10	20
202.5	10		< 10			10		< 10	< 10
210.1	< 10		< 10			< 10		*	*
211	< 10		10			10		63	< 10
220	< 10		< 10			10		10	10
300.1	10		97			85		41	41
301.1	< 10		**546**	**213**	< 10	52		20	10
301.2	10		**295**	85		**292**	< 10	< 10	< 10
320	**110**	< 10	< 10			**193**	10	63	< 10

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)			
Crissy Field	202.4, 202.5	03/07	0.08	03/24	0.04
Aquatic Park	210.1, 211	03/15	0.27	03/28	0.11
Mission Creek	220	03/16	0.08	03/29	0.03
Candlestick Point State Recreation Area	300.1, 301.1, 301.2	03/18	0.02		
Islais Creek	320				

STATION POSTED due to elevated bacteria count

STATION POSTED due to Combined Sewer Discharge

* Station not accessible due to Covid-19 restrictions

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)

Reviewed by: R Duggan

City and County of San Francisco
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Appendix O-TL2

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Mon/01	Tue/02	Wed/03	Mon/08	Mon/15	Tue/16	Wed/17	Mon/22	Mon/29	Tue/30
202.4	2359	1421	41	10	86			10	10	
202.5	75			52	52			10	20	
210.1	< 10			262	52			20	10	
211	41			85	98			20	41	
220	98			121	41			41	52	
300.1	309			74	428	414		20	328	697
301.1	1872			41	2489	934	173	10	63	
301.2	30			31	41			< 10	216	75
320	2613	301		373	884			327	86	

Sampling/Posting issues
None

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥400** MPN/100 mL[1]

Location	Mon/01	Tue/02	Wed/03	Mon/08	Mon/15	Tue/16	Wed/17	Mon/22	Mon/29	Tue/30
202.4	**1607**	**1112**	10	< 10	52			10	10	
202.5	10			< 10	10			< 10	10	
210.1	< 10			85	20			< 10	< 10	
211	10			< 10	75			< 10	10	
220	10			31	< 10			10	< 10	
300.1	< 10			10	292	145		< 10	85	309
301.1	122			10	**1334**	**867**	10	10	< 10	
301.2	< 10			20	< 10			< 10	20	< 10
320	**602**	74		31	108			< 10	< 10	

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Mon/01	Tue/02	Wed/03	Mon/08	Mon/15	Tue/16	Wed/17	Mon/22	Mon/29	Tue/30
202.4	85	52	< 10	< 10	10			< 10	< 10	
202.5	< 10			< 10	< 10			< 10	< 10	
210.1	< 10			< 10	< 10			< 10	< 10	
211	< 10			< 10	10			10	10	
220	< 10			< 10	< 10			< 10	< 10	
300.1	< 10			< 10	**131**	31		< 10	**171**	20
301.1	63			< 10	52	< 10	< 10	< 10	10	
301.2	< 10			< 10	< 10			< 10	**226**	< 10
320	97	41		< 10	20			31	< 10	

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)			
Crissy Field	202.4, 202.5	04/01	0.03	04/08	0.06
Aquatic Park	210.1, 211	04/02	0.09	04/15	0.03
Mission Creek	220	04/05	0.13	04/16	0.02
Candlestick Point State Recreation Area	300.1, 301.1, 301.2				
Islais Creek	320				

STATION POSTED due to elevated bacteria count

STATION POSTED due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)

Reviewed by: R Duggan

City and County of San Francisco
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Appendix O-TL2

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Mon/06	Tue/07	Wed/08	Mon/13	Tue/14	Wed/15	Mon/20	Mon/27
202.4	< 10			96			31	30
202.5	< 10			31			< 10	< 10
210.1	*			*			*	*
211	41			63			20	31
220	663			1130			909	727
300.1	241			714			181	1317
301.1	1565	4884	2603	**14136**	**11199**	1401	2187	5475
301.2	75			**10112**	266		487	1624
320	**> 24196**	**19863**	2098	1296			1014	1086

Sampling/Posting issues
Hyde St Pier (210.1) not accessible due to Covid-19 social distancing restrictions

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥400** MPN/100 mL[1]

Location	Mon/06	Tue/07	Wed/08	Mon/13	Tue/14	Wed/15	Mon/20	Mon/27
202.4	< 10			< 10			10	< 10
202.5	< 10			< 10			< 10	< 10
210.1	*			*			*	*
211	< 10			< 10			< 10	10
220	31			< 10			< 10	< 10
300.1	10			10			10	< 10
301.1	52	63	< 10	31	20	20	10	85
301.2	10			20	41		< 10	< 10
320	**984**	75	10	20			20	10

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Mon/06	Tue/07	Wed/08	Mon/13	Tue/14	Wed/15	Mon/20	Mon/27
202.4	< 10			10			< 10	< 10
202.5	< 10			< 10			< 10	< 10
210.1	*			*			*	*
211	< 10			< 10			31	20
220	< 10			< 10			< 10	< 10
300.1	< 10			< 10			< 10	31
301.1	**134**	**108**	< 10	20	< 10	31	< 10	< 10
301.2	< 10			41	31		10	10
320	**496**	20	< 10	< 10			10	< 10

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)
Crissy Field	202.4, 202.5	04/04 0.10
Aquatic Park	210.1, 211	04/05 0.44
Mission Creek	220	04/06 0.30
Candlestick Point State Recreation Area	300.1, 301.1, 301.2	
Islais Creek	320	

STATION POSTED due to elevated bacteria count
STATION POSTED due to Combined Sewer Discharge
* Station not accessible due to Covid-19 restrictions

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)

Reviewed by: R. Duggan

City and County of San Francisco
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April/May 2018

Appendix O-TL2

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Mon 4/30	Mon/07	Mon/14	Tues/15	Wed/16	Mon/21	Tues/29	30-day Geometric Mean[2]
202.4	10	< 10	20			< 10	269	22
202.5	20	< 10	< 10			< 10	10	11
210.1	10	10	109			20	52	26
211	30	31	148			< 10	41	36
220	20	10	20			41	41	23
300.1	373	134	697	749	10	364	10	138
301.1	10	86	31	< 10		31	< 10	21
301.2	85	10	20			< 10	< 10	18
320	85	97	74			41	63	69

Sampling/Posting issues
None

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥400** MPN/100 mL[1]

Location	Mon 4/30	Mon/07	Mon/14	Tues/15	Wed/16	Mon/21	Tues/29	30-day Geometric Mean[2]
202.4	< 10	< 10	< 10			< 10	41	13
202.5	< 10	< 10	< 10			< 10	10	10
210.1	< 10	< 10	85			< 10	< 10	15
211	10	< 10	122			< 10	41	22
220	< 10	10	< 10			< 10	< 10	10
300.1	10	52	**546**	246	< 10	31	< 10	42
301.1	< 10	20	< 10	< 10		< 10	< 10	11
301.2	< 10	10	10			< 10	< 10	10
320	10	< 10	20			< 10	10	11

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Mon 4/30	Mon/07	Mon/14	Tues/15	Wed/16	Mon/21	Tues/29	30-day Geometric Mean[2]
202.4	10	< 10	< 10			< 10	31	13
202.5	< 10	< 10	< 10			< 10	< 10	10
210.1	< 10	< 10	< 10			< 10	< 10	10
211	10	< 10	10			< 10	< 10	10
220	< 10	< 10	< 10			< 10	< 10	10
300.1	31	10	41	**203**	10	41	< 10	27
301.1	< 10	31	**203**	< 10		10	< 10	20
301.2	< 10	< 10	< 10			< 10	< 10	10
320	< 10	< 10	< 10			< 10	< 10	10

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)
Crissy Field	202.4, 202.5	05/23 0.03
Aquatic Park	210.1, 211	
Mission Creek	220	
Candlestick Point State Recreation Area	300.1, 301.1, 301.2	
Islais Creek	320	

STATION POSTED due to elevated bacteria count
STATION POSTED due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)
[2]Geometric means calculated for 5 or more samples per 30-day period.

Reviewed by: D O'Donohue

City and County of San Francisco
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May 2019

Appendix O-TL2

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Mon/06	Mon/13	Tue/14	Sun/19	Mon/20	Tue/28	Wed/29
202.4	31	< 10			122	< 10	
202.5	20	20			120	75	
210.1	31	241			10	31	
211	75	187			350	10	
220	20	41			135	10	
300.1	670	75			569	373	281
301.1	201	3448		441	336	41	
301.2	< 10	120		*	279	712	
320	471	631	231		1314	86	

Sampling/Posting issues
Incorrect site sampled on 5/19 sampled the next day (5/20)

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥400** MPN/100 mL[1]

Location	Mon/06	Mon/13	Tue/14	Sun/19	Mon/20	Tue/28	Wed/29
202.4	10	< 10			10	< 10	
202.5	10	< 10			10	< 10	
210.1	< 10	20			< 10	< 10	
211	20	20			10	< 10	
220	< 10	< 10			< 10	< 10	
300.1	272	31			30	10	10
301.1	31	52		161	20	< 10	
301.2	< 10	< 10		*	20	20	
320	20	**548**	10		20	31	

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Mon/06	Mon/13	Tue/14	Sun/19	Mon/20	Tue/28	Wed/29
202.4	< 10	< 10			10	< 10	
202.5	10	< 10			< 10	< 10	
210.1	10	10			< 10	< 10	
211	10	< 10			< 10	< 10	
220	< 10	< 10			< 10	< 10	
300.1	63	< 10			52	**155**	31
301.1	< 10	10		**146**	20	< 10	
301.2	10	10		*	< 10	10	
320	< 10	< 10	< 10		< 10	< 10	

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)
Crissy Field	202.4, 202.5	05/15 0.45
Aquatic Park	210.1, 211	05/16 0.26
Mission Creek	220	05/18 0.96
Candlestick Point	300.1, 301.1, 301.2	05/19 0.25
State Recreation Area		05/21 0.29
Islais Creek	320	05/26 0.02

STATION POSTED due to elevated bacteria count
STATION POSTED due to Combined Sewer Discharge
* STATION sampled the next day

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)

Reviewed by: R Duggan

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Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Mon/04	Mon/11	Tue/12	Mon/18	Mon/25	30-day Geometric Mean[2]
202.4	31	20		20	119	
202.5	< 10	31		20	< 10	
210.1	10	< 10		41	< 10	
211	31	< 10		20	86	
220	20	30		41	41	
300.1	63	< 10		161	199	
301.1	20	< 10		20	31	
301.2	< 10	933	20	75	< 10	43
320	173	52		74	63	

Sampling/Posting issues
None

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥400** MPN/100 mL[1]

Location	Mon/04	Mon/11	Tue/12	Mon/18	Mon/25	30-day Geometric Mean[2]
202.4	31	10		10	63	
202.5	< 10	< 10		< 10	< 10	
210.1	< 10	< 10		31	< 10	
211	10	< 10		10	< 10	
220	< 10	< 10		30	< 10	
300.1	20	< 10		122	97	
301.1	< 10	< 10		10	31	
301.2	< 10	**884**	10	< 10	< 10	25
320	< 10	10		< 10	< 10	

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Mon/04	Mon/11	Tue/12	Mon/18	Mon/25	30-day Geometric Mean[2]
202.4	< 10	< 10		10	< 10	
202.5	10	< 10		< 10	< 10	
210.1	< 10	< 10		< 10	< 10	
211	20	< 10		< 10	31	
220	< 10	< 10		< 10	< 10	
300.1	10	< 10		20	< 10	
301.1	< 10	< 10		20	< 10	
301.2	< 10	52	10	< 10	< 10	14
320	< 10	< 10		10	52	

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)
Crissy Field	202.4, 202.5	None
Aquatic Park	210.1, 211	
Mission Creek	220	
Candlestick Point State Recreation Area	300.1, 301.1, 301.2	
Islais Creek	320	

STATION POSTED due to elevated bacteria count
STATION POSTED due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)
[2]Geometric means calculated for 5 or more samples per 30-day period.

Reviewed by: Rduggan

Appendix O-TL2

City and County of San Francisco
SFPUC Wastewater Enterprise
Monthly Bay Shoreline Bacteriological Report
June 2019

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Mon/03	Mon/10	Tue/11	Mon/17	Mon/24	Tue/25
202.4	110	1439		10	10	
202.5	20	565		10	10	
210.1	10	199		< 10	52	
211	10	305		10	75	
220	75	63		< 10	< 10	10
300.1	373	195		226	156	
301.1	30	384		226	420	
301.2	1515	2014	2909	2481	**> 24196**	51
320	135	1989		30	529	

Sampling/Posting issues
None

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥400** MPN/100 mL[1]

Location	Mon/03	Mon/10	Tue/11	Mon/17	Mon/24	Tue/25
202.4	20	< 10		< 10	< 10	
202.5	< 10	< 10		< 10	< 10	
210.1	< 10	52		< 10	< 10	
211	10	134		< 10	63	
220	< 10	31		< 10	< 10	< 10
300.1	121	< 10		10	20	
301.1	10	< 10		10	52	
301.2	< 10	**1236**	20	20	**> 24196**	< 10
320	10	52		< 10	10	

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Mon/03	Mon/10	Tue/11	Mon/17	Mon/24	Tue/25
202.4	< 10	20		< 10	< 10	
202.5	< 10	10		< 10	< 10	
210.1	< 10	20		< 10	< 10	
211	< 10	< 10		< 10	20	
220	< 10	< 10		20	**471**	< 10
300.1	75	10		< 10	10	
301.1	< 10	10		< 10	10	
301.2	10	**246**	< 10	10	**> 24196**	< 10
320	< 10	10		< 10	< 10	

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)
Crissy Field	202.4, 202.5	None
Aquatic Park	210.1, 211	
Mission Creek	220	
Candlestick Point State Recreation Area	300.1, 301.1, 301.2	
Islais Creek	320	

STATION POSTED due to elevated bacteria count
STATION POSTED due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)

Reviewed by: R Duggan

City and County of San Francisco
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Appendix O-TL2

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL

Location	Mon/02	Mon/09	Mon/16	Mon/23	Mon/30	30-day Geometric Mean[2]
202.4	52	52	84	41	73	58
202.5	30	< 10	20	10	< 10	14
210.1	20	< 10	10	63	10	17
211	41	< 10	< 10	41	10	18
220	30	< 10	10	10	31	16
300.1	160	< 10	41	110	63	54
301.1	< 10	10	74	< 10	31	19
301.2	52	31	20	30	41	33
320	74	10	695	175	2603	188

Sampling/Posting issues
None

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥400** MPN/100 mL[1]

Location	Mon/02	Mon/09	Mon/16	Mon/23	Mon/30	30-day Geometric Mean[2]
202.4	< 10	31	10	10	20	14
202.5	< 10	< 10	< 10	< 10	< 10	10
210.1	20	< 10	10	31	< 10	14
211	10	< 10	< 10	31	< 10	13
220	10	< 10	10	< 10	10	10
300.1	52	< 10	< 10	41	41	24
301.1	< 10	10	41	< 10	10	13
301.2	10	< 10	20	30	20	16
320	< 10	10	20	10	305	23

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Mon/02	Mon/09	Mon/16	Mon/23	Mon/30	30-day Geometric Mean[2]
202.4	20	< 10	10	10	< 10	11
202.5	< 10	< 10	< 10	< 10	< 10	10
210.1	< 10	< 10	< 10	< 10	< 10	10
211	< 10	< 10	< 10	< 10	< 10	10
220	< 10	< 10	10	< 10	< 10	10
300.1	< 10	< 10	< 10	20	< 10	11
301.1	10	< 10	10	< 10	< 10	10
301.2	10	< 10	< 10	< 10	< 10	10
320	< 10	< 10	41	< 10	< 10	13

Table 4. Beaches/Stations/Rainfall

Beaches	Stations
Crissy Field	202.4, 202.5
Aquatic Park	210.1, 211
Mission Creek	220
Candlestick Point State Recreation Area	300.1, 301.1, 301.2
Islais Creek	320

Rainfall (in.)
None

STATION POSTED due to elevated bacteria count

STATION POSTED due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)

[2]Geometric means calculated for 5 or more samples per 30-day period.

Reviewed by: R Duggan

City and County of San Francisco
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Appendix O-TL2

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Mon/01	Tue/02	Wed/03	Mon/08	Tue/09	Mon/15	Mon/22	Mon/29	Wed/31
202.4	52			74		52	148	96	
202.5	< 10			41		52	< 10	20	
210.1	< 10			7270		< 10	41	10	
211	2909	221	31	457	52	31	86	41	41
220	63			265		74	41	20	
300.1	262			624	243	< 10	< 10	1119	
301.1	51			108		10	30	134	
301.2	10			10		< 10	75	41	
320	132			135		759	98	108	

Sampling/Posting issues
None

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥400** MPN/100 mL[1]

Location	Mon/01	Tue/02	Wed/03	Mon/08	Tue/09	Mon/15	Mon/22	Mon/29	Wed/31
202.4	< 10			< 10		20	41	20	
202.5	< 10			10		41	< 10	10	
210.1	< 10			< 10		< 10	< 10	10	
211	**1172**	73	< 10	52	< 10	31	41	30	20
220	10			31		10	< 10	10	
300.1	41			146	10	< 10	< 10	389	
301.1	10			< 10		10	< 10	52	
301.2	< 10			10		< 10	10	20	
320	< 10			< 10		10	< 10	10	

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Mon/01	Tue/02	Wed/03	Mon/08	Tue/09	Mon/15	Mon/22	Mon/29	Wed/31
202.4	< 10			< 10		< 10	10	31	
202.5	< 10			< 10		< 10	10	< 10	
210.1	10			10		< 10	< 10	< 10	
211	**359**	**175**	< 10	**109**	< 10	< 10	10	< 10	< 10
220	< 10			< 10		< 10	< 10	< 10	
300.1	10			**657**	20	< 10	20	52	
301.1	86			10		10	< 10	< 10	
301.2	< 10			< 10		< 10	< 10	61	
320	10			10		52	< 10	< 10	

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)
Crissy Field	202.4, 202.5	None
Aquatic Park	210.1, 211	
Mission Creek	220	
Candlestick Point State Recreation Area	300.1, 301.1, 301.2	
Islais Creek	320	

STATION POSTED due to elevated bacteria count

STATION POSTED due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)

Reviewed by: R Duggan

City and County of San Francisco
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Appendix O-TL2

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Mon/06	Tue/07	Mon/13	Tue/14	Wed/15	Thu/16	Fri/17	Sat/18	Sun/19	Mon/20	Tue/21	Mon/27	Tue/28	30-day Geometric Mean[2]
202.4	10		63							10		63		
202.5	< 10		< 10							20		20		
210.1	20		41							63		< 10		
211	20		97							4611	168	754		258
220	10		20							10		63		
300.1	< 10		272							75		5172	520	223
301.1	**15531**	41	185							108		512		365
301.2	< 10		98	20						269		31		44
320	187		**24196**	7270	5794	**> 24196**	**> 24196**	5794	776	556		754		3406

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥400** MPN/100 mL[1]

Location	Mon/06	Tue/07	Mon/13	Tue/14	Wed/15	Thu/16	Fri/17	Sat/18	Sun/19	Mon/20	Tue/21	Mon/27	Tue/28	30-day Geometric Mean[2]
202.4	< 10		20							< 10		< 10		
202.5	< 10		< 10							< 10		10		
210.1	10		< 10							41		< 10		
211	10		85							**480**	156	122		95
220	< 10		< 10							10		10		
300.1	< 10		98							20		**1989**	187	94
301.1	**3448**	10	20							41		94		77
301.2	< 10		75	20						169		10		30
320	20		**4611**	**1376**	**1334**	**24196**	< 10	**839**	86	145		41		335

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Mon/06	Tue/07	Mon/13	Tue/14	Wed/15	Thu/16	Fri/17	Sat/18	Sun/19	Mon/20	Tue/21	Mon/27	Tue/28	30-day Geometric Mean[2]
202.4	< 10		< 10							10		< 10		
202.5	< 10		< 10							< 10		20		
210.1	< 10		< 10							< 10		< 10		
211	< 10		< 10							**279**	97	31		38
220	< 10		< 10							< 10		< 10		
300.1	< 10		41							< 10		**763**	31	40
301.1	**650**	10	10							10		41		31
301.2	< 10		**313**	< 10						< 10		< 10		20
320	< 10		10	< 10	< 10	< 10	20	< 10	20	41		< 10		13

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)
Crissy Field	202.4, 202.5	None
Aquatic Park	210.1, 211	
Mission Creek	220	
Candlestick Point State Recreation Area	300.1, 301.1, 301.2	
Islais Creek	320	

Reviewed by: R Duggan

Sampling/Posting Issues = None

STATION POSTED due to elevated bacteria count

STATION POSTED due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)

[2]Geometric means calculated for 5 or more samples per 30-day period.

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Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Mon/05	Tue/06	Mon/12	Mon/19	Mon/26	Tue/27
202.4	414		52	638	< 10	
202.5	63		41	31	10	
210.1	52		10	30	52	
211	20	120	238	52	75	
220	31		< 10	63	< 10	
300.1	10		10	120	120	
301.1	41		41	10	52	
301.2	146		131	52	2359	< 10
320	422		323	3448	193	

Sampling/Posting issues
None

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥400** MPN/100 mL[1]

Location	Mon/05	Tue/06	Mon/12	Mon/19	Mon/26	Tue/27
202.4	31		20	41	< 10	
202.5	20		< 10	< 10	< 10	
210.1	10		< 10	20	10	
211	20	73	209	31	31	
220	10		< 10	10	< 10	
300.1	< 10		< 10	41	< 10	
301.1	10		< 10	< 10	10	
301.2	85		< 10	< 10	**2359**	< 10
320	30		10	121	10	

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Mon/05	Tue/06	Mon/12	Mon/19	Mon/26	Tue/27
202.4	< 10		10	20	< 10	
202.5	10		10	75	< 10	
210.1	< 10		< 10	< 10	< 10	
211	< 10	20	10	< 10	31	
220	< 10		< 10	< 10	< 10	
300.1	< 10		< 10	< 10	< 10	
301.1	< 10		10	< 10	< 10	
301.2	< 10		10	20	98	< 10
320	41		< 10	10	< 10	

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)
Crissy Field	202.4, 202.5	None
Aquatic Park	210.1, 211	
Mission Creek	220	
Candlestick Point State Recreation Area	300.1, 301.1, 301.2	
Islais Creek	320	

STATION POSTED due to elevated bacteria count
STATION POSTED due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)

Reviewed by: R Duggan

City and County of San Francisco
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Appendix O-TL2

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** M

Location	Tue/04	Mon/10	Mon/17	Mon/24	30-day Geometric Mean[2]
202.4	< 10	52	10	< 10	
202.5	31	10	10	20	
210.1	10	< 10	20	20	
211	135	86	455	63	
220	199	20	10	110	
300.1	171	173	187	305	
301.1	52	109	253	213	
301.2	437	169	216	20	
320	85	20	75	31	

Sampling/Posting issues
None

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥400** MPN/100 mL

Location	Tue/04	Mon/10	Mon/17	Mon/24	30-day Geometric Mean[2]
202.4	< 10	< 10	< 10	< 10	
202.5	< 10	< 10	< 10	< 10	
210.1	< 10	< 10	20	< 10	
211	75	75	187	52	
220	< 10	< 10	< 10	10	
300.1	41	86	10	41	
301.1	20	20	211	171	
301.2	253	< 10	86	10	
320	20	< 10	20	10	

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/

Location	Tue/04	Mon/10	Mon/17	Mon/24	30-day Geometric Mean[2]
202.4	< 10	< 10	20	< 10	
202.5	10	< 10	< 10	< 10	
210.1	< 10	< 10	< 10	< 10	
211	10	52	20	< 10	
220	< 10	< 10	< 10	< 10	
300.1	10	< 10	< 10	10	
301.1	20	20	< 10	52	
301.2	73	< 10	20	< 10	
320	< 10	< 10	< 10	< 10	

Table 4. Beaches/Stations/Rainfall

Beaches	Stations
Crissy Field	202.4, 202.5
Aquatic Park	210.1, 211
Mission Creek	220
Candlestick Point State Recreation Area	300.1, 301.1, 301.2
Islais Creek	320

Rainfall (in.): None

STATION POSTED due to elevated bacteria count

STATION POSTED due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)

[2]Geometric means calculated for 5 or more samples per 30-day period.

Reviewed by: R Duggan

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Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Tue/03	Mon/09	Tue/10	Mon/16	Tue/17	Mon/23	Mon/30
202.4	292	41		2046		52	697
202.5	52	31		9208	7270	120	31
210.1	246	712	109	86		52	< 10
211	122	< 10		75		52	464
220	31	131		865		30	75
300.1	132	146		185		185	97
301.1	63	657		373		253	4106
301.2	97	20		< 10		135	63
320	122	683		288		52	318

Sampling/Posting issues
None

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥400** MPN/100 mL[1]

Location	Tue/03	Mon/09	Tue/10	Mon/16	Tue/17	Mon/23	Mon/30
202.4	10	10		10		31	**583**
202.5	10	10		31	41	52	< 10
210.1	231	**677**	63	< 10		31	< 10
211	41	< 10		52		20	**464**
220	< 10	10		121		10	20
300.1	52	20		< 10		41	10
301.1	10	< 10		< 10		41	30
301.2	20	< 10		< 10		98	31
320	< 10	161		52		10	< 10

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Tue/03	Mon/09	Tue/10	Mon/16	Tue/17	Mon/23	Mon/30
202.4	20	< 10		97		10	< 10
202.5	< 10	< 10		**1565**	< 10	< 10	< 10
210.1	10	10	< 10	10		10	10
211	20	< 10		< 10		< 10	**175**
220	< 10	10		10		10	< 10
300.1	10	10		< 10		< 10	10
301.1	< 10	< 10		< 10		41	10
301.2	10	< 10		< 10		10	10
320	< 10	10		10		< 10	31

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)
Crissy Field	202.4, 202.5	09/16 0.05
Aquatic Park	210.1, 211	09/18 0.01
Mission Creek	220	09/27 0.03
Candlestick Point State Recreation Area	300.1, 301.1, 301.2	
Islais Creek	320	

STATION POSTED due to elevated bacteria count

STATION POSTED due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)

Reviewed by: H Peterson

City and County of San Francisco
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Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Tue/01	Mon/07	Tue/15	Wed/16	Mon/21	Mon/28	Tue/29	Wed/30	Thu/31
202.4	< 10	10	10		< 10	63			
202.5		10	10		< 10	84			
210.1		86	63		30	41			
211	63	161	3255	< 10	85	52			
220		20	158		75	97			
300.1		130	122		1187	1076	520		
301.1		233	**10462**	317	2143	706	4352	1100	8164
301.2		31	10		146	73			
320		41	183		63	158			

Sampling/Posting issues
None

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥400** MPN/100 mL[1]

Location	Tue/01	Mon/07	Tue/15	Wed/16	Mon/21	Mon/28	Tue/29	Wed/30	Thu/31
202.4	< 10	< 10	10		< 10	< 10			
202.5		< 10	< 10		< 10	30			
210.1		31	10		< 10	< 10			
211	31	135	**2187**	< 10	74	10			
220		< 10	10		< 10	30			
300.1		52	20		< 10	**749**	20		
301.1		75	< 10	10	< 10	350	**1022**	**789**	272
301.2		10	< 10		< 10	41			
320		10	20		10	52			

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Tue/01	Mon/07	Tue/15	Wed/16	Mon/21	Mon/28	Tue/29	Wed/30	Thu/31
202.4	10	10	< 10		< 10	< 10			
202.5		< 10	< 10		< 10	41			
210.1		< 10	< 10		< 10	10			
211	< 10	10	**272**	52	20	10			
220		< 10	< 10		10	< 10			
300.1		10	10		< 10	**158**	10		
301.1		< 10	< 10	< 10	< 10	**12997**	31	**705**	75
301.2		< 10	10		< 10	10			
320		10	10		< 10	10			

Table 4. Beaches/Stations/Rainfall

Beaches	Stations
Crissy Field	202.4, 202.5
Aquatic Park	210.1, 211
Mission Creek	220
Candlestick Point State Recreation Area	300.1, 301.1, 301.2
Islais Creek	320

Rainfall (in.)
None

STATION POSTED due to elevated bacteria count
STATION POSTED due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)

Reviewed by: Rduggan

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Appendix O-TL2

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Mon/01	Tue/02	Tue/09	Mon/15	Tue/16	Thu/18	Fri/19	Sat/20	Sun/21
202.4	< 10		30	31					
202.5	20		75	10					
210.1	52		85	52					
211	1178	52	86	20					
220	537	52	10	< 10					
300.1	83		63	61					
301.1	1597	987	160	247					
301.2	161		350	512	161				
320	175		708	97		20	414	199	135

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥400** MPN/100 mL[1]

Location	Mon/01	Tue/02	Tue/09	Mon/15	Tue/16	Thu/18	Fri/19	Sat/20	Sun/21
202.4	< 10		< 10	10					
202.5	10		10	< 10					
210.1	< 10		63	10					
211	**820**	20	63	10					
220	**496**	20	< 10	< 10					
300.1	30		10	20					
301.1	**833**	292	41	85					
301.2	110		< 10	259	75				
320	10		31	10		< 10	20	31	10

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Mon/01	Tue/02	Tue/09	Mon/15	Tue/16	Thu/18	Fri/19	Sat/20	Sun/21
202.4	10		< 10	< 10					
202.5	< 10		41	< 10					
210.1	10		< 10	20					
211	**109**	< 10	< 10	< 10					
220	10	< 10	< 10	< 10					
300.1	< 10		< 10	31					
301.1	31	97	10	63					
301.2	41		20	**262**	31				
320	10		20	< 10		< 10	< 10	< 10	< 10

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)
Crissy Field	202.4, 202.5	10/02 0.05
Aquatic Park	210.1, 211	
Mission Creek	220	
Candlestick Point State Recreation Area	300.1, 301.1, 301.2	
Islais Creek	320	

STATION POSTED due to elevated bacteria count
STATION POSTED due to Combined Sewer Discharge
STATION POSTED as a precaution due to fully treated effluent leak in mid-channel

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)
[2]Geometric means calculated for 5 or more samples per 30-day period.

Reviewed by: R Duggan

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Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Mon/22	Tue/23	Wed/24	Thu/25	Fri/26	Sat/27	Sun/28	Mon/29	30-day Geometric Mean[2]
202.4	41							< 10	21
202.5	20							30	25
210.1	10							20	34
211	< 10							20	53
220	52							75	47
300.1	52							86	68
301.1	203							110	334
301.2	20							41	125
320	31	228	52	169	259	63	243	122	134

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥400** MPN/100 mL[1]

Location	Mon/22	Tue/23	Wed/24	Thu/25	Fri/26	Sat/27	Sun/28	Mon/29	30-day Geometric Mean[2]
202.4	10							< 10	10
202.5	< 10							10	10
210.1	< 10							10	14
211	< 10							10	32
220	10							63	29
300.1	31							20	21
301.1	98							41	123
301.2	< 10							30	43
320	< 10	63	10	20	< 10	20	171	20	19

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Mon/22	Tue/23	Wed/24	Thu/25	Fri/26	Sat/27	Sun/28	Mon/29	30-day Geometric Mean[2]
202.4	< 10							< 10	10
202.5	< 10							< 10	13
210.1	< 10							10	11
211	10							10	15
220	< 10							< 10	10
300.1	< 10							10	13
301.1	20							10	27
301.2	< 10							10	30
320	< 10	10	10	< 10	10	< 10	< 10	< 10	10

Sampling/Posting issues
None

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)
Crissy Field	202.4, 202.5	None
Aquatic Park	210.1, 211	
Mission Creek	220	
Candlestick Point State Recreation Area	300.1, 301.1, 301.2	
Islais Creek	320	

STATION POSTED due to elevated bacteria count
STATION POSTED due to Combined Sewer Discharge
STATION POSTED as a precaution due to fully treated effluent leak in mid-channel

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)
[2]Geometric means calculated for 5 or more samples per 30-day period.

Reviewed by: R Duggan

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Appendix O-TL2

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Mon/04	Tue/05	Wed/06	Tue/12	Mon/18	Mon/25	Tue/26	Wed/27	Thu/28	Fri/29	Sat/30
202.4	97	31	10	31	< 10	135					
202.5	10			63	20	52					
210.1	85			20	52	132					
211	341			63	75	855	341				
220	20			52	185	158		**> 24196**	**11199**	**> 24196**	3448
300.1	134			52	1314	8664					
301.1	4884			299	448	798	187				
301.2	63			41	52	< 10					
320	< 10			160	161	250		**> 24196**	**> 24196**	**> 24196**	2909

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥400** MPN/100 mL[1]

Location	Mon/04	Tue/05	Wed/06	Tue/12	Mon/18	Mon/25	Tue/26	Wed/27	Thu/28	Fri/29	Sat/30
202.4	85	10	< 10	< 10	< 10	75					
202.5	10			41	< 10	10					
210.1	< 10			< 10	< 10	10					
211	41			41	41	364	231				
220	< 10			< 10	10	< 10		**6867**	**504**	**691**	121
300.1	< 10			31	41	282					
301.1	51			249	< 10	359	< 10				
301.2	< 10			41	< 10	< 10					
320	< 10			41	20	84		**> 24196**	**19863**	**14136**	173

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Mon/04	Tue/05	Wed/06	Tue/12	Mon/18	Mon/25	Tue/26	Wed/27	Thu/28	Fri/29	Sat/30
202.4	**> 24196**	**110**	< 10	10	< 10	31					
202.5	< 10			20	< 10	41					
210.1	< 10			10	< 10	< 10					
211	< 10			20	10	**882**	10				
220	< 10			< 10	< 10	< 10		**3448**	**218**	**537**	63
300.1	10			10	10	63					
301.1	10			< 10	< 10	**241**	< 10				
301.2	10			31	< 10	10					
320	< 10			< 10	< 10	20		**> 24196**	**3654**	**798**	**120**

Table 4. Beaches/Stations/Rainfall

Beaches	Stations
Crissy Field	202.4, 202.5
Aquatic Park	210.1, 211
Mission Creek	220
Candlestick Point State Recreation Area	300.1, 301.1, 301.2
Islais Creek	320

Rainfall (in.)			
11/26	0.75	11/28	0.12
11/27	0.03	11/30	0.19

STATION POSTED due to elevated bacteria count

STATION POSTED due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)

Reviewed by: R Duggan

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Appendix O-TL2

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Mon/05	Tue/13	Mon/19	Tue/20	Wed/21	Thu/22	Fri/23	Sat/24
202.4	10	< 10	10	75	6131	160		
202.5	10	10	31		2064	1198	341	243
210.1	52	31	< 10		**> 24196**	285		
211	10	20	10		201			
220	< 10	< 10	20		**> 24196**	**> 24196**	**> 24196**	**19863**
300.1	481	31	10					
301.1	171	160	31					
301.2	31	10	< 10					
320	31	158	457		**> 24196**	**> 24196**	**> 24196**	**> 24196**

Sampling/Posting issues
None

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥400** MPN/100 mL[1]

Location	Mon/05	Tue/13	Mon/19	Tue/20	Wed/21	Thu/22	Fri/23	Sat/24
202.4	< 10	< 10	10	52	**985**	52		
202.5	10	10	10		**464**	**657**	75	75
210.1	< 10	< 10	< 10		63	52		
211	< 10	10	< 10		41			
220	< 10	< 10	< 10		**> 24196**	**6867**	**1137**	**448**
300.1	318	< 10	10					
301.1	41	10	10					
301.2	10	10	< 10					
320	< 10	20	97		**> 24196**	**> 24196**	**14136**	**2142**

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Mon/05	Tue/13	Mon/19	Tue/20	Wed/21	Thu/22	Fri/23	Sat/24
202.4	< 10	< 10	**110**	41	**173**	< 10		
202.5	< 10	< 10	10		**122**	**631**	98	31
210.1	52	10	< 10		< 10	20		
211	10	10	< 10		52			
220	< 10	< 10	< 10		**> 24196**	**908**	**414**	63
300.1	20	< 10	< 10					
301.1	84	31	20					
301.2	< 10	< 10	< 10					
320	< 10	10	10		**24196**	**> 24196**	**3448**	31

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)
Crissy Field	202.4, 202.5	11/21 1.39
Aquatic Park	210.1, 211	11/22 0.66
Mission Creek	220	11/23 0.79
Candlestick Point State Recreation Area	300.1, 301.1, 301.2	11/24 0.03
Islais Creek	320	

STATION POSTED due to elevated bacteria count
STATION POSTED due to Combined Sewer Discharge
STATION remained posted and resampled due to borderline result

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)
[2]Geometric means calculated for 5 or more samples per 30-day period.

R Duggan

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November 2018 (cont.)

Appendix O-TL2

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Sun/25	Mon/26	Tue/27	Thu/29	Fri/30	30-day Geometric Mean[2]
202.4		216		2481	521	140
202.5		41		1076	*	145
210.1		158		355		180
211		189		602		60
220	1408	1017		**24196**	**12997**	1654
300.1		122				
301.1		855				
301.2		528		1314	538	102
320	**17329**	**17329**	1918	**> 24196**	**> 24196**	5024

Sampling/Posting issues
202.5 sampled the next day

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥400** MPN/100 mL[1]

Location	Sun/25	Mon/26	Tue/27	Thu/29	Fri/30	30-day Geometric Mean[2]
202.4		10		31	31	31
202.5		10		31	*	43
210.1		41		31		24
211		< 10		41		16
220	160	31		**1223**	368	245
300.1		< 10				
301.1		108				
301.2		211		201	63	37
320	**479**	**480**	187	**> 24196**	**4884**	1048

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Sun/25	Mon/26	Tue/27	Thu/29	Fri/30	30-day Geometric Mean[2]
202.4		20		**135**	< 10	30
202.5		10		**107**	*	40
210.1		< 10		31		16
211		< 10		75		18
220	10	10		**488**	**109**	90
300.1		< 10				
301.1		75				
301.2		31		**717**	41	31
320	41	**108**	< 10	**8164**	**578**	220

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)
Crissy Field	202.4, 202.5	11/27 0.26
Aquatic Park	210.1, 211	11/28 1.04
Mission Creek	220	11/29 0.37
Candlestick Point State Recreation Area	300.1, 301.1, 301.2	
Islais Creek	320	

STATION POSTED due to elevated bacteria count
STATION POSTED due to Combined Sewer Discharge
* STATION sampled the next day

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)
[2]Geometric means calculated for 5 or more samples per 30-day period.

Reviewed by: R Duggan

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Appendix O-TL2

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Sun/01	Mon/02	Tue/03	Sun/08	Mon/09	Tue/10	Wed/11	Thu/12
202.4		135		233	173			
202.5		684		135	146			
210.1		275		1119	336			
211		108		1106	246			
220		3654	120	**> 24196**	**12033**	3873		
300.1		2613	556		627			
301.1		1333	231		1334			
301.2		1081	441		727			
320	2481	4352		**> 24196**	**> 24196**	**> 24196**	**14136**	6488

Sampling/Posting issues
None

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥400** MPN/100 mL[1]

Location	Sun/01	Mon/02	Tue/03	Sun/08	Mon/09	Tue/10	Wed/11	Thu/12
202.4		10		75	20			
202.5		10		20	< 10			
210.1		98		**538**	63			
211		20		**414**	41			
220		228	< 10	**5172**	**789**	146		
300.1		231	41		158			
301.1		97	10		52			
301.2		213	20		52			
320	135	134		**> 24196**	**8164**	**4611**	**529**	393

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Sun/01	Mon/02	Tue/03	Sun/08	Mon/09	Tue/10	Wed/11	Thu/12
202.4		31		**173**	< 10			
202.5		84		< 10	10			
210.1		10		**226**	< 10			
211		20		**231**	< 10			
220		**171**	< 10	**1842**	**298**	86		
300.1		**583**	75		31			
301.1		**106**	10		10			
301.2		**602**	41		52			
320	**109**	98		**> 24196**	**638**	**109**	**145**	97

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)			
Crissy Field	202.4, 202.5	12/01	0.18	12/08	0.19
Aquatic Park	210.1, 211	12/02	0.27	12/09	0.01
Mission Creek	220	12/03	0.02	12/10	0.18
Candlestick Point	300.1, 301.1, 301.2	12/04	0.23	12/11	0.17
State Recreation Area		12/06	0.43	12/12	0.04
Islais Creek	320	12/07	0.58		

STATION POSTED due to elevated bacteria count
STATION POSTED due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)

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Appendix O-TL2

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Mon/16	Tue/17	Mon/23	Tue/24	Mon/30	Tue/31
202.4	10		75		1414	
202.5	10		20		63	
210.1	31		41		31	
211	10		52		86	
220	161		201		862	
300.1	2282	663	2723	554	1281	3654
301.1	1597		3654	1439	959	
301.2	145		650		31	
320	3448		9804	4352	1396	

Sampling/Posting issues
None

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥400** MPN/100 mL[1]

Location	Mon/16	Tue/17	Mon/23	Tue/24	Mon/30	Tue/31
202.4	< 10		< 10		52	
202.5	< 10		< 10		< 10	
210.1	10		< 10		10	
211	< 10		< 10		< 10	
220	20		41		135	
300.1	160	31	216	52	41	**2909**
301.1	63		97	20	85	
301.2	10		20		< 10	
320	218		364	63	52	

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Mon/16	Tue/17	Mon/23	Tue/24	Mon/30	Tue/31
202.4	< 10		20		52	
202.5	10		10		< 10	
210.1	< 10		20		< 10	
211	< 10		20		10	
220	< 10		10		51	
300.1	**216**	73	**613**	20	**145**	**121**
301.1	41		**173**	52	98	
301.2	31		74		< 10	
320	52		**226**	85	84	

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)			
Crissy Field	202.4, 202.5	12/13	0.06	12/22	0.67
Aquatic Park	210.1, 211	12/14	0.03	12/24	0.01
Mission Creek	220	12/17	0.03	12/25	0.30
Candlestick Point State Recreation Area	300.1, 301.1, 301.2	12/18	0.48	12/29	0.53
Islais Creek	320				

STATION POSTED due to elevated bacteria count
STATION POSTED due to Combined Sewer Discharge
STATION POSTED later determined no Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)

Reviewed by: R Duggan

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Appendix O-TL2

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Sat/01	Sun/02	Mon/03	Tue/04	Mon/10	Mon/17	Tue/18	Mon/24	Tue/25	Mon/31	30-day Geometric Mean[2]
202.4			20		41	359		52		< 10	43
202.5	**17329**	122	10		63	85		109		63	134
210.1			74		20	259		*		*	
211			318	75	10	262		134		135	102
220	**> 24196**	862	1160		395	**> 24196**	364	201		201	1165
300.1			677	504	86	4106	556	120		63	338
301.1			743		404	**14136**	411	3255	332	63	738
301.2			**14136**	906	< 10	2359	317	282		31	363
320	9804	7270	2187		1012	2613		471		75	1466

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥400** MPN/100 mL[1]

Location	Sat/01	Sun/02	Mon/03	Tue/04	Mon/10	Mon/17	Tue/18	Mon/24	Tue/25	Mon/31	30-day Geometric Mean[2]
202.4			< 10		< 10	85		10		< 10	15
202.5	**512**	< 10	< 10		10	20		< 10		10	19
210.1			< 10		< 10	98		*		*	
211			216	10	< 10	10		41		31	25
220	**691**	52	74		20	**> 24196**	10	10		75	100
300.1			355	173	20	**554**	85	10		10	67
301.1			145		20	**4106**	132	134	63	31	122
301.2			**583**	86	< 10	110	31	41		< 10	49
320	**414**	223	75		31	20		< 10		< 10	46

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Sat/01	Sun/02	Mon/03	Tue/04	Mon/10	Mon/17	Tue/18	Mon/24	Tue/25	Mon/31	30-day Geometric Mean[2]
202.4			< 10		< 10	63		< 10		< 10	14
202.5	**383**	< 10	< 10		< 10	41		< 10		< 10	21
210.1			< 10		< 10	31		*		*	
211			**243**	85	< 10	20		< 10		10	27
220	**161**	20	20		< 10	**6131**	10	10		10	38
300.1			**776**	73	10	**448**	41	74		10	69
301.1			20		20	**2489**	41	**173**	85	10	67
301.2			**884**	31	10	**134**	30	41		< 10	46
320	98	75	30		20	75		31		< 10	37

Sampling/Posting issues

Hyde St pier (210.1) not accessible due to partial govt. shutdown

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)			
Crissy Field	202.4, 202.5	12/01	0.31	12/16	0.83
Aquatic Park	210.1, 211	12/04	0.04	12/21	0.06
Mission Creek	220	12/05	0.30	12/24	0.68
Candlestick Point State Recreation Area	300.1, 301.1, 301.2	12/14	0.03		
Islais Creek	320				

STATION POSTED due to elevated bacteria count

STATION POSTED due to Combined Sewer Discharge

* Station not accessible due to partial government shutdown

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)

[2]Geometric means calculated for 5 or more samples per 30-day period.

Reviewed by: R Duggan

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Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Mon/04	Tue/05	Wed/06	Thu/07	Mon/11	Mon/18	Tue/19	Tue/26
202.4	< 10				< 10	< 10		20
202.5	< 10				10	74		30
210.1	*				*	*		*
211	20				< 10	41		10
220	*				496	1314		554
300.1	199				4352	554		5938
301.1	7701	8664	**12997**	1515	7701	**10462**	3076	5475
301.2	109				801	161		4106
320	512				624	1246		728

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥400** MPN/100 mL[1]

Location	Mon/04	Tue/05	Wed/06	Thu/07	Mon/11	Mon/18	Tue/19	Tue/26
202.4	< 10				< 10	< 10		< 10
202.5	< 10				< 10	< 10		< 10
210.1	*				*	*		*
211	< 10				< 10	20		10
220	*				20	10		10
300.1	20				253	52		10
301.1	**1670**	**714**	**414**	10	211	305	119	75
301.2	< 10				30	10		20
320	< 10				30	31		20

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Mon/04	Tue/05	Wed/06	Thu/07	Mon/11	Mon/18	Tue/19	Tue/26
202.4	< 10				< 10	< 10		< 10
202.5	10				< 10	10		< 10
210.1	*				*	*		*
211	< 10				< 10	< 10		52
220	*				< 10	< 10		< 10
300.1	< 10				52	10		< 10
301.1	< 10	41	< 10	20	10	10	< 10	< 10
301.2	< 10				10	< 10		< 10
320	< 10				< 10	10		< 10

Sampling/Posting issues
Mission Creek (220) on 5/4/20 and Hyde St Pier (210.1) not accessible due to Covid-19 social distancing restrictions

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)
Crissy Field	202.4, 202.5	05/12 0.04
Aquatic Park	210.1, 211	05/14 0.02
Mission Creek	220	05/15 0.01
Candlestick Point	300.1, 301.1, 301.2	05/17 0.25
State Recreation Area		05/18 0.03
Islais Creek	320	

STATION POSTED due to elevated bacteria count

STATION POSTED due to Combined Sewer Discharge

* Station not accessible due to Covid-19 restrictions

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)

Reviewed by: Ross Duggan

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Appendix O-TL2

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Mon/01	Mon/08	Tue/09	Mon/15	Tue/16	Mon/22	Mon/29
202.4	52	41		2187	52	41	31
202.5	20	41		63	10	20	41
210.1	*	*		*		*	*
211	85	52		10		98	41
220	284	435		379		285	231
300.1	4352	1267		1374		326	315
301.1	1334	7701		6488	591	3873	981
301.2	278	**> 24196**	381	97		395	142
320	520	4106		97		794	399

Sampling/Posting issues
Hyde St Pier (210.1) not accessible due to Covid-19 social distancing restrictions

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥400** MPN/100 mL[1]

Location	Mon/01	Mon/08	Tue/09	Mon/15	Tue/16	Mon/22	Mon/29
202.4	< 10	< 10		< 10	< 10	< 10	< 10
202.5	< 10	< 10		< 10	< 10	< 10	10
210.1	*	*		*		*	*
211	75	< 10		< 10		20	10
220	41	< 10		< 10		< 10	< 10
300.1	132	52		41		< 10	52
301.1	41	131		**738**	20	173	41
301.2	10	< 10	171	< 10		10	10
320	20	20		10		96	52

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Mon/01	Mon/08	Tue/09	Mon/15	Tue/16	Mon/22	Mon/29
202.4	< 10	10		**6488**	< 10	10	< 10
202.5	< 10	< 10		**269**	< 10	< 10	< 10
210.1	*	*		*		*	*
211	10	< 10		< 10		< 10	10
220	< 10	< 10		< 10		< 10	< 10
300.1	< 10	< 10		20		< 10	< 10
301.1	< 10	20		10	< 10	< 10	10
301.2	10	< 10	10	< 10		< 10	< 10
320	10	< 10		< 10		30	< 10

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)
Crissy Field	202.4, 202.5	None
Aquatic Park	210.1, 211	
Mission Creek	220	
Candlestick Point State Recreation Area	300.1, 301.1, 301.2	
Islais Creek	320	

STATION POSTED due to elevated bacteria count
STATION POSTED due to Combined Sewer Discharge
* Station not accessible due to Covid-19 restrictions

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)

 Reviewed by: R Duggan

Appendix O-TL2

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Monthly Ocean Shoreline Bacteriological Report
January 2016

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Mon/04	Tue/05	Wed/06	Thu/07	Mon/11	Mon/18	Tue/19	Wed/20	Mon/25	30-day Geometric Mean[2]
15	171	9804	842		3784		481		5794	1568
15EAST	74	158	464		52		146		84	123
16	20	155	439		31		110		75	84
17	20				97		173		20	
18	10		1071		41	733	6131	85	41	183
19	51		2755	327	52	960	**> 24196**	109	41	354
21.1	31		233		20	327	**15531**	10	96	132
20			548			410	2481	20		
21			706			489	3448	109		
22			231				**19863**	135		

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥ 400** MPN/100 mL[1]

Location	Mon/04	Tue/05	Wed/06	Thu/07	Mon/11	Mon/18	Tue/19	Wed/20	Mon/25	30-day Geometric Mean[2]
15	20	241	85		30		10		52	43
15EAST	20	20	109		20		< 10		< 10	21
16	10	51	161		< 10		< 10		31	25
17	10				< 10		20		< 10	
18	10		216		20	98	**2247**	31	10	60
19	< 10		**591**	63	20	135	**24196**	20	< 10	91
21.1	20		20		< 10	52	**4106**	< 10	20	40
20			97			52	336	10		
21			41			41	373	10		
22			20				**1565**	< 10		

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥ 104** MPN/100 mL[1]

Location	Mon/04	Tue/05	Wed/06	Thu/07	Mon/11	Mon/18	Tue/19	Wed/20	Mon/25	30-day Geometric Mean[2]
15	< 10	**384**	52		10		31		10	29
15EAST	10	52	52		20		10		< 10	19
16	< 10	**379**	41		< 10		20		< 10	26
17	< 10				10		31		< 10	
18	20		52		< 10	20	**520**	10	< 10	27
19	< 10		**173**	52	10	52	**> 24196**	10	< 10	57
21.1	< 10		62		< 10	10	**749**	20	30	31
20			84			41	**109**	< 10		
21			63			20	**146**	10		
22			75				**1529**	< 10		

Table 4. Beaches/Stations/Rainfall

Beaches	Stations
Baker Beach	15, 15EAST, 16
China Beach	17
Ocean Beach	18, 19, 20, 21, 21.1
Ft. Funston	22

Rainfall (in.)					
01/03	0.04	01/10	0.01	01/18	0.17
01/04	0.06	01/13	0.21	01/19	1.02
01/05	1.07	01/14	0.08	01/22	0.12
01/06	1.01	01/15	0.12	01/23	0.04
01/07	0.08	01/16	0.23	01/29	0.30
01/09	0.17	01/17	1.05	01/30	0.01

STATION POSTED due to elevated bacteria count
STATION POSTED due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)
[2]Geometric means calculated for 5 or more samples per 30-day period.

Reviewed by: R Duggan

Appendix O-TL2

City and County of San Francisco
SFPUC Wastewater Enterprise
Monthly Ocean Shoreline Bacteriological Report
January 2017

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Tue/03	Sun/08	Mon/09	Tue/10	Wed/11	Thu/12	Fri/13	Tue/17
15	1296		842		4160	1291		2851
15EAST	98		145		644	281		1106
16	31		121		1014	426		480
17	< 10		108					327
18	10	**> 24196**	171		504			20
19	52	**> 24196**	586		594	571	31	31
21.1	10	583	148		504			< 10
20		794	247		404			
21		620	309		318			
22		**> 24196**	135	**> 24196**	1872			

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥ 400** MPN/100 mL[1]

Location	Tue/03	Sun/08	Mon/09	Tue/10	Wed/11	Thu/12	Fri/13	Tue/17
15	10		31		345	86		10
15EAST	< 10		10		231	52		10
16	< 10		< 10		393	31		10
17	< 10		10					< 10
18	10	**> 24196**	< 10		98			< 10
19	31	**> 24196**	63		171	109	< 10	< 10
21.1	< 10	20	< 10		63			< 10
20		75	< 10		63			
21		75	< 10		62			
22		**> 24196**	10	**1658**	110			

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥ 104** MPN/100 mL[1]

Location	Tue/03	Sun/08	Mon/09	Tue/10	Wed/11	Thu/12	Fri/13	Tue/17
15	10		< 10		**146**	52		20
15EAST	< 10		< 10		**121**	20		10
16	< 10		20		**134**	31		< 10
17	< 10		10					< 10
18	< 10	**5794**	< 10		84			< 10
19	< 10	**> 24196**	31		**134**	**233**	< 10	< 10
21.1	< 10	**195**	10		31			< 10
20		**145**	85		62			
21		**122**	31		31			
22		**19863**	**158**	**7701**	20			

Table 4. Beaches/Stations/Rainfall

Beaches	Stations
Baker Beach	15, 15EAST, 16
China Beach	17
Ocean Beach	18, 19, 20, 21, 21.1
Ft. Funston	22

Rainfall (in.)			
01/01	0.05	01/08	1.36
01/02	0.04	01/09	0.15
01/03	0.31	01/10	1.62
01/04	0.67	01/11	0.19
01/07	0.75	01/12	0.36

STATION POSTED due to elevated bacteria count
STATION POSTED due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)

R Duggan

Appendix O-TL2

City and County of San Francisco
SFPUC Wastewater Enterprise
Monthly Ocean Shoreline Bacteriological Report
January 2017 (cont.)

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Thu/19	Fri/20	Sat/21	Sun/22	Mon/23	Mon/30	30-day Geometric Mean[2]
15	6488	3448		359	1835	206	1481
15EAST	160	243		563	336	132	278
16	169	426		238	743	52	235
17					638	52	103
18					233	31	163
19					420	10	216
21.1		265			256	< 10	86
20		712					487
21		309					370
22		2247	341				2200

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥ 400** MPN/100 mL[1]

Location	Thu/19	Fri/20	Sat/21	Sun/22	Mon/23	Mon/30	30-day Geometric Mean[2]
15	364	233		< 10	20	< 10	42
15EAST	< 10	20		< 10	< 10	10	17
16	< 10	< 10		10	20	< 10	17
17					41	< 10	13
18					41	10	52
19					63	< 10	73
21.1		20			41	< 10	18
20		75					43
21		20					31
22		**441**	75				337

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥ 104** MPN/100 mL[1]

Location	Thu/19	Fri/20	Sat/21	Sun/22	Mon/23	Mon/30	30-day Geometric Mean[2]
15	75	< 10		< 10	41	10	23
15EAST	10	20		20	< 10	< 10	16
16	< 10	10		20	20	< 10	18
17					20	< 10	11
18					< 10	10	34
19					31	< 10	58
21.1		20			20	< 10	20
20		20					63
21		20					39
22		75	41				338

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)			
Baker Beach	15, 15EAST, 16	01/18	0.69	01/21	0.29
China Beach	17	01/19	0.03	01/22	0.74
Ocean Beach	18, 19, 20, 21, 21.1	01/20	0.72	01/23	0.43
Ft. Funston	22				

STATION POSTED due to elevated bacteria count
STATION POSTED due to Combined Sewer Discharge
STATION POSTED but no Combined Sewer Discharge occurred

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)

[2]Geometric means calculated for 5 or more samples per 30-day period.

Reviewed by R Duggan

City and County of San Francisco
SFPUC Wastewater Enterprise
Monthly Ocean Shoreline Bacteriological Report
January 2018 (cont.)

Appendix O-TL2

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Tue/02	Wed/03	Thu/04	Mon/08	Tue/09	Wed/10	Thu/11	Fri/12
15	816	1334	10	**24196**	4106	3255	4352	52
15EAST	119	< 10	30	175	988	197	86	41
16	97			109	1607			
17	31			1210				
18	< 10			41				
19	< 10			**> 24196**	6488	771		
21.1	31			985	6488	450		
20				3076	691			
21				**> 24196**	**12997**	2755	171	
22				**> 24196**	1565			

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥ 400** MPN/100 mL[1]

Location	Tue/02	Wed/03	Thu/04	Mon/08	Tue/09	Wed/10	Thu/11	Fri/12
15	135	52	10	**1291**	171	173	158	< 10
15EAST	84	< 10	10	< 10	259	52	41	10
16	63			10	243			
17	10			161				
18	< 10			< 10				
19	< 10			**> 24196**	**1274**	98		
21.1	10			52	**727**	98		
20				**464**	201			
21				**> 24196**	**1607**	**462**	20	
22				**6131**	262			

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥ 104** MPN/100 mL[1]

Location	Tue/02	Wed/03	Thu/04	Mon/08	Tue/09	Wed/10	Thu/11	Fri/12
15	**183**	**836**	20	**2400**	**223**	**256**	**187**	< 10
15EAST	41	10	10	41	52	10	< 10	10
16	10			**110**	52			
17	< 10			52				
18	< 10			< 10				
19	< 10			**> 24196**	**146**	31		
21.1	10			**368**	**199**	< 10		
20				**144**	41			
21				**17329**	**173**	41	< 10	
22				**3609**	52			

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)			
Baker Beach	15, 15EAST, 16	01/03	0.04	01/08	3.67
China Beach	17	01/04	0.02	01/09	0.39
Ocean Beach	18, 19, 20, 21, 21.1	01/05	0.30	01/10	0.01
Ft. Funston	22				

STATION POSTED due to elevated bacteria count
STATION POSTED due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)
[2]Geometric means calculated for 5 or more samples per 30-day period.

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Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Tue/16	Mon/22	Tue/23	Wed/24	Thu/25	Mon/29	30-day Geometric Mean[2]
15	288	9804	1607	9208	7701	2755	1598
15EAST	98	85	134	2382	30	52	104
16	173	52		327		41	154
17	10	*	20			< 10	38
18	75	20				52	32
19	31	63				31	257
21.1	135	31				52	212

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥ 400** MPN/100 mL[1]

Location	Tue/16	Mon/22	Tue/23	Wed/24	Thu/25	Mon/29	30-day Geometric Mean[2]
15	73	98	52	246	10	52	76
15EAST	20	< 10	< 10	63	< 10	10	22
16	10	20		20		< 10	25
17	10	*	10			< 10	17
18	31	< 10				20	14
19	10	10				10	84
21.1	41	20				< 10	44

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥ 104** MPN/100 mL[1]

Location	Tue/16	Mon/22	Tue/23	Wed/24	Thu/25	Mon/29	30-day Geometric Mean[2]
15	20	**110**	75	**122**	< 10	20	92
15EAST	< 10	10	< 10	20	98	< 10	17
16	74	< 10		20		< 10	26
17	10	*	< 10			< 10	14
18	10	10				< 10	10
19	31	10				20	68
21.1	10	< 10				< 10	26

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)
Baker Beach	15, 15EAST, 16	01/18 0.34 01/25 0.04
China Beach	17	01/22 0.23 01/26 0.01
Ocean Beach	18, 19, 20, 21, 21.1	01/24 0.3
Ft. Funston	22	

STATION POSTED due to elevated bacteria count
STATION POSTED due to Combined Sewer Discharge
* No access to site due to locked gate; sample collected the next day

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)
[2]Geometric means calculated for 5 or more samples per 30-day period.

Reviewed by R Duggan

City and County of San Francisco
SFPUC Wastewater Enterprise
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February 2016

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Mon/01	Mon/08	Tue/16	Thu/18	Mon/22	Tue/23	Mon/29	30-day Geometric Mean[2]
15	3448	131	1374		5172	2755	888	1410
15EAST	52	41	41		< 10	31	< 10	25
16	20	20	10		20		10	15
17	41	932	< 10	41	< 10		< 10	34
18	< 10	41	10		52		< 10	18
19	110	10	< 10		63		1046	59
21.1	98	< 10	10		85		20	28

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥ 400** MPN/100 mL[1]

Location	Mon/01	Mon/08	Tue/16	Thu/18	Mon/22	Tue/23	Mon/29	30-day Geometric Mean[2]
15	41	< 10	31		**749**	156	< 10	50
15EAST	10	10	10		< 10	10	< 10	10
16	< 10	10	< 10		< 10		10	10
17	< 10	< 10	< 10	10	< 10		< 10	10
18	< 10	10	< 10		< 10		< 10	10
19	< 10	10	< 10		10		**1046**	25
21.1	10	< 10	< 10		31		10	13

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Mon/01	Mon/08	Tue/16	Thu/18	Mon/22	Tue/23	Mon/29	30-day Geometric Mean[2]
15	10	20	31		30	31	< 10	20
15EAST	10	< 10	< 10		< 10	< 10	< 10	10
16	< 10	20	10		< 10		20	13
17	< 10	< 10	< 10	10	10		10	10
18	< 10	< 10	< 10		< 10		< 10	10
19	< 10	< 10	< 10		< 10		< 10	10
21.1	10	< 10	< 10		10		< 10	10

Table 4. Beaches/Stations/Rainfall

Beaches	Stations
Baker Beach	15, 15EAST, 16
China Beach	17
Ocean Beach	18, 19, 21.1

Rainfall (in.)	
02/02	0.20
02/17	0.46
02/18	0.06
02/19	0.21
02/20	0.01

STATION POSTED due to elevated bacteria count
STATION POSTED due to Combined Sewer Discharge
STATION POSTED due to incorrect set points on overflow alarm

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)
[2]Geometric means calculated for 5 or more samples per 30-day period.

Reviewed by: R. Duggan

City and County of San Francisco
SFPUC Wastewater Enterprise
Monthly Ocean Shoreline Bacteriological Report
February 2017

Appendix O-TL2

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Mon/06	Tue/07	Wed/08	Thu/09	Mon/13	Sat/18	Sun/19	Mon/20	Tue/21	Wed/22	Mon/27	30-day Geometric Mean[2]
15	**14136**	*	5475		663	1842	2851	1162	1723		189	1783
15EAST	74	*	259		226	620	480	697	1314		185	349
16	52	*	201		443	767		341	2613		201	349
17	109				448				1296	657	122	348
18	31	*	345		31			432	265		52	112
19	74	*	228		30			5172	538		122	236
21.1	131	*	733	959	10			345	857		31	188
20		*	496					313	457			
21		*	350					350	631			
22		201						**> 24196**	1223			

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥ 400** MPN/100 mL[1]

Location	Mon/06	Tue/07	Wed/08	Thu/09	Mon/13	Sat/18	Sun/19	Mon/20	Tue/21	Wed/22	Mon/27	30-day Geometric Mean[2]
15	85	*	63		< 10	84	10	31	226		31	42
15EAST	< 10	*	20		10	31	10	20	231		20	22
16	< 10	*	41		20	63		10	187		10	27
17	10				20				241	30	< 10	27
18	10	*	31		< 10			52	31		10	19
19	30	*	10		< 10			**860**	31		< 10	30
21.1	10	*	20	97	< 10			85	86		< 10	28
20		*	10					< 10	96			
21		*	< 10					52	52			
22		31						**9804**	97			

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥ 104** MPN/100 mL[1]

Location	Mon/06	Tue/07	Wed/08	Thu/09	Mon/13	Sat/18	Sun/19	Mon/20	Tue/21	Wed/22	Mon/27	30-day Geometric Mean[2]
15	41	*	< 10		< 10	**107**	10	20	20		< 10	19
15EAST	< 10	*	20		< 10	10	31	31	52		< 10	18
16	< 10	*	< 10		< 10	10		10	20		< 10	11
17	< 10				20				**110**	10	< 10	19
18	< 10	*	20		< 10			10	< 10		< 10	11
19	< 10	*	10		< 10			199	10		< 10	16
21.1	10	*	**426**	52	< 10			20	30		< 10	28
20		*	20					30	31			
21		*	20					10	20			
22		< 10						**3654**	< 10			

Table 4. Beaches/Stations/Rainfall

Beaches	Stations
Baker Beach	15, 15EAST, 16
China Beach	17
Ocean Beach	18, 19, 20, 21, 21.1
Ft. Funston	22

Rainfall (in.)

02/02	0.07	02/08	0.31	02/18	0.35		
02/03	0.44	02/09	0.88	02/19	0.11	02/25	0.02
02/04	0.53	02/10	0.02	02/20	1.62	02/26	0.10
02/05	0.25	02/15	0.09	02/21	0.41	02/27	0.02
02/06	0.40	02/16	0.42	02/22	0.01		
02/07	0.90	02/17	1.01	02/23	0.01		

STATION POSTED due to elevated bacteria count
STATION POSTED due to Combined Sewer Discharge
* STATION POSTED due to Combined Sewer Discharge sampled next day due to sampling error
STATION POSTED due to error

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)

[2]Geometric means calculated for 5 or more samples per 30-day period.

Reviewed by: A Loveland

City and County of San Francisco
SFPUC Wastewater Enterprise
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Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Mon/05	Tue/06	Mon/12	Tue/20	Mon/26	30-day Geometric Mean[2]
15	2924	249	74	3076	266	536
15EAST	2187	10	63	10	97	67
16	< 10		20	< 10	63	
17	< 10		31	< 10	10	
18	< 10		689	10	10	
19	< 10		20	10	10	
21.1	< 10		98	< 10	< 10	

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥ 400** MPN/100 mL[1]

Location	Mon/05	Tue/06	Mon/12	Tue/20	Mon/26	30-day Geometric Mean[2]
15	84	20	< 10	20	< 10	20
15EAST	**2098**	< 10	52	< 10	< 10	41
16	< 10		10	< 10	< 10	
17	< 10		< 10	< 10	< 10	
18	< 10		10	< 10	10	
19	< 10		< 10	< 10	10	
21.1	< 10		31	< 10	< 10	

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Mon/05	Tue/06	Mon/12	Tue/20	Mon/26	30-day Geometric Mean[2]
15	31	10	10	< 10	10	13
15EAST	41	< 10	31	< 10	10	17
16	< 10		< 10	< 10	10	
17	10		< 10	< 10	< 10	
18	< 10		< 10	< 10	< 10	
19	< 10		10	< 10	20	
21.1	< 10		< 10	< 10	< 10	

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)
Baker Beach	15, 15EAST, 16	02/26 0.24
China Beach	17	02/28 0.21
Ocean Beach	18, 19, 21.1	

STATION POSTED due to elevated bacteria count
STATION POSTED due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)
[2]Geometric means calculated for 5 or more samples per 30-day period.

Reviewed by: R Duggan

Appendix O-TL2

City and County of San Francisco
SFPUC Wastewater Enterprise
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March 2016

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Tue/01	Sun/06	Mon/07	Tue/08	Fri/11	Sat/12	Sun/13	Mon/14	Tue/15	Mon/21	Tue/22	Mon/28	30-day Geometric Mean[2]
15		**15531**	759	86				1187		109		3076	860
15EAST		448	563	31				110		1334	95	10	141
16		341	749	52				73		121	74	10	98
17		617	1374					63	86	6867	20	20	200
18		305	677	218	146		364	97		134		10	154
19	< 10	1250	2046	187	2247	328	**19863**	350		20		10	294
21.1		228		183 *	1935	52	228	41		121		< 10	115
20		265			2143	120	350						393
21		189			1314		6488	121					
22		426											

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥ 400** MPN/100 mL[1]

Location	Tue/01	Sun/06	Mon/07	Tue/08	Fri/11	Sat/12	Sun/13	Mon/14	Tue/15	Mon/21	Tue/22	Mon/28	30-day Geometric Mean[2]
15		122	145	10				31		41		10	36
15EAST		75	109	10				< 10		**620**	< 10	< 10	34
16		63	292	< 10				41		20	10	10	28
17		86	259					< 10	10	**455**	< 10	10	37
18		20	146	< 10	10		41	20		41		< 10	24
19	< 10	52	**520**	10	**1081**	41	**1723**	122		< 10		< 10	69
21.1		31		41 *	52	10	10	< 10		52		< 10	19
20		20			122	20	31						35
21		20			75		**697**	20					
22		20											

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥ 104** MPN/100 mL[1]

Location	Tue/01	Sun/06	Mon/07	Tue/08	Fri/11	Sat/12	Sun/13	Mon/14	Tue/15	Mon/21	Tue/22	Mon/28	30-day Geometric Mean[2]
15		63	**420**	< 10				31		< 10		20	34
15EAST		20	63	< 10				20		**697**	10	< 10	29
16		10	**231**	< 10				< 10		**145**	< 10	< 10	23
17		< 10	84					< 10	20	**169**	< 10	< 10	22
18		< 10	**110**	< 10	41		41	10		< 10		< 10	19
19	< 10	31	**315**	< 10	73	10	**465**	20		20		< 10	33
21.1		20		41 *	**183**	10	20	< 10		20		< 10	20
20		10			**187**	< 10	31						28
21		10			95		**235**	20					
22		63											

Table 4. Beaches/Stations/Rainfall

Beaches	Stations
Baker Beach	15, 15EAST, 16
China Beach	17
Ocean Beach	18, 19, 20, 21, 21.1
Ft. Funston	22

Rainfall (in.)			
03/03	0.04	03/10	0.95
03/04	0.34	03/11	0.38
03/05	1.21	03/12	1.21
03/06	0.57	03/13	0.46
03/07	0.19	03/20	0.10
03/09	0.14	03/21	0.16

STATION POSTED due to elevated bacteria count
STATION POSTED due to Combined Sewer Discharge
Not physically posted
STATION POSTED due to private residence sewage lateral pipe breakage draining into storm drain

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)

[2]Geometric means calculated for 5 or more samples per 30-day period.

***** Not sampled till the next day due to safety reasons

Reviewed by: R Duggan

City and County of San Francisco
SFPUC Wastewater Enterprise
Monthly Ocean Shoreline Bacteriological Report
March 2017

Appendix O-TL2

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Sun/05	Mon/06	Tue/07	Mon/13	Mon/20	Tue/21	Wed/22	Fri/24	Mon/27	30-day Geometric Mean[2]
15	443	8164		616	8664	246	288		1421	1100
15EAST	744	563		63	30	171	345		86	169
16	323	336		10	< 10	52	216		20	59
17		228		20	< 10			132	98	57
18	573	226		10	< 10	228			10	56
19	**> 24196**	512		< 10	10	8164	231		10	218
21.1	2909	201		< 10	< 10	1137			20	105
20	2481					771				
21	**14136**	1782	86			591				
22	1989					1054				

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥ 400** MPN/100 mL[1]

Location	Sun/05	Mon/06	Tue/07	Mon/13	Mon/20	Tue/21	Wed/22	Fri/24	Mon/27	30-day Geometric Mean[2]
15	< 10	20		< 10	31	41	10		20	18
15EAST	86	20		< 10	< 10	< 10	98		< 10	21
16	52	20		< 10	< 10	< 10	20		10	15
17		41		20	< 10			20	< 10	17
18	52	52		< 10	< 10	10			< 10	17
19	**9804**	52		< 10	< 10	**1081**	31		< 10	78
21.1	231	20		< 10	< 10	52			< 10	25
20	336					20				
21	**2098**	**480**	< 10			20				
22	199					63				

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥ 104** MPN/100 mL[1]

Location	Sun/05	Mon/06	Tue/07	Mon/13	Mon/20	Tue/21	Wed/22	Fri/24	Mon/27	30-day Geometric Mean[2]
15	< 10	10		< 10	75	< 10	< 10		< 10	13
15EAST	10	< 10		< 10	< 10	< 10	< 10		< 10	10
16	20	< 10		10	< 10	< 10	< 10		< 10	11
17		10		< 10	< 10			< 10	10	10
18	20	< 10		< 10	< 10	< 10			< 10	11
19	**1334**	20		< 10	< 10	**185**	< 10		< 10	34
21.1	**108**	< 10		< 10	< 10	< 10			< 10	15
20	63					31				
21	**309**	41	< 10			< 10				
22	52					< 10				

Table 4. Beaches/Stations/Rainfall

Beaches	Stations
Baker Beach	15, 15EAST, 16
China Beach	17
Ocean Beach	18, 19, 20, 21, 21.1
Ft. Funston	22

Rainfall (in.)			
03/04	1.13	03/21	0.32
03/05	0.25	03/22	0.10
03/06	0.35	03/24	0.56
03/16	0.01	03/25	0.01
03/20	0.97	03/26	0.04

STATION POSTED due to elevated bacteria count
STATION POSTED due to Combined Sewer Discharge
STATION POSTED due to loss of power at pump station; 5-day report submitted

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)

[2]Geometric means calculated for 5 or more samples per 30-day period.

Reviewed by: R Duggan

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City and County of San Francisco
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March 2018

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Thu/01	Fri/02	Sat/03	Sun/04	Mon/05	Mon/12	Mon/19	Mon/26	30-day Geometric Mean[2]
15	**24196**	1153	1169	5475	8164	41	226	882	1363
15EAST	789	256	836	20	63	85	52	20	108
16	109				10	226	10	< 10	30
17	41				10	20	< 10	< 10	15
18					144	41	10	< 10	
19					10	10	< 10	< 10	
21.1					85	20	< 10	< 10	

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥ 400** MPN/100 mL[1]

Location	Thu/01	Fri/02	Sat/03	Sun/04	Mon/05	Mon/12	Mon/19	Mon/26	30-day Geometric Mean[2]
15	**435**	85	63	187	122	< 10	20	20	62
15EAST	86	98	< 10	< 10	10	20	10	< 10	19
16	20				< 10	10	< 10	< 10	11
17	< 10				10	< 10	< 10	< 10	10
18					144	20	< 10	< 10	
19					< 10	< 10	< 10	< 10	
21.1					63	< 10	< 10	< 10	

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Thu/01	Fri/02	Sat/03	Sun/04	Mon/05	Mon/12	Mon/19	Mon/26	30-day Geometric Mean[2]
15	**309**	**683**	**121**	**144**	73	< 10	< 10	< 10	64
15EAST	52	**7701**	10	**292**	< 10	< 10	< 10	< 10	43
16	< 10				< 10	< 10	< 10	< 10	10
17	< 10				< 10	< 10	< 10	< 10	10
18					< 10	< 10	< 10	< 10	
19					< 10	< 10	< 10	< 10	
21.1					10	< 10	< 10	< 10	

Table 4. Beaches/Stations/Rainfall

Beaches	Stations
Baker Beach	15, 15EAST, 16
China Beach	17
Ocean Beach	18, 19, 21.1

Rainfall (in.)			
03/01	0.89	03/15	0.40
03/02	0.18	03/16	0.21
03/03	0.06	03/17	0.22
03/04	0.03	03/20	0.61
03/07	0.02	03/21	0.28
03/08	0.06	03/22	0.45
03/12	0.04	03/24	0.04
03/13	0.59	03/25	0.04
03/14	0.04		

STATION POSTED due to elevated bacteria count
STATION POSTED due to Combined Sewer Discharge
STATION POSTED but no CSD occurred at this site

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)

[2]Geometric means calculated for 5 or more samples per 30-day period.

Reviewed by: R Duggan

City and County of San Francisco
SFPUC Wastewater Enterprise
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April 2016

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Mon/04	Mon/11	Mon/18	Mon/25	30-day Geometric Mean[2]
15	6131	131	520	4106	
15EAST	< 10	97	10	31	
16	< 10	20	20	< 10	
17	10	52	< 10	< 10	
18	10	10	< 10	10	
19	20	20	< 10	< 10	
21.1	< 10	20	20	20	

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥ 400** MPN/100 mL[1]

Location	Mon/04	Mon/11	Mon/18	Mon/25	30-day Geometric Mean[2]
15	30	10	< 10	63	
15EAST	< 10	10	10	< 10	
16	< 10	10	< 10	< 10	
17	10	< 10	< 10	< 10	
18	< 10	10	< 10	10	
19	< 10	20	< 10	< 10	
21.1	< 10	20	< 10	10	

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Mon/04	Mon/11	Mon/18	Mon/25	30-day Geometric Mean[2]
15	< 10	< 10	10	31	
15EAST	< 10	10	< 10	< 10	
16	< 10	10	< 10	< 10	
17	< 10	< 10	< 10	< 10	
18	< 10	< 10	< 10	< 10	
19	< 10	< 10	< 10	< 10	
21.1	< 10	< 10	< 10	< 10	

Table 4. Beaches/Stations/Rainfall

Beaches	Stations
Baker Beach	15, 15EAST, 16
China Beach	17
Ocean Beach	18, 19, 21.1

Rainfall (in.)	
04/08	0.14
04/09	0.46
04/10	0.04
04/14	0.08
04/22	0.16
04/27	0.08

STATION POSTED due to elevated bacteria count
STATION POSTED due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)
[2]Geometric means calculated for 5 or more samples per 30-day period.

Reviewed by: R Duggan

Appendix O-TL2

City and County of San Francisco
SFPUC Wastewater Enterprise
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April 2017

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Mon/03	Fri/07	Sat/08	Mon/10	Mon/17	Mon/24	30-day Geometric Mean[2]
15	1014			142	131	3076	
15EAST	52			63	110	41	
16	10			331	3654	31	
17	41			110	110	171	
18	20	97		63	31	< 10	33
19	20	1529	132	41	31	41	77
21.1	< 10	134		52	31	< 10	29
20		63					
21		197					
22		74					

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥ 400** MPN/100 mL[1]

Location	Mon/03	Fri/07	Sat/08	Mon/10	Mon/17	Mon/24	30-day Geometric Mean[2]
15	31			10	10	109	
15EAST	10			10	10	< 10	
16	< 10			31	10	10	
17	20			< 10	20	< 10	
18	< 10	10		< 10	10	< 10	10
19	10	**422**	30	< 10	< 10	10	22
21.1	< 10	31		10	10	< 10	13
20		< 10					
21		20					
22		< 10					

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥ 104** MPN/100 mL[1]

Location	Mon/03	Fri/07	Sat/08	Mon/10	Mon/17	Mon/24	30-day Geometric Mean[2]
15	41			10	< 10	52	
15EAST	< 10			< 10	10	< 10	
16	< 10			30	< 10	< 10	
17	< 10			< 10	< 10	< 10	
18	10	< 10		< 10	< 10	< 10	10
19	10	85	< 10	< 10	10	< 10	14
21.1	< 10	20		< 10	< 10	< 10	11
20		20					
21		10					
22		20					

Table 4. Beaches/Stations/Rainfall

Beaches	Stations
Baker Beach	15, 15EAST, 16
China Beach	17
Ocean Beach	18, 19, 20, 21, 21.1
Ft. Funston	22

Rainfall (in.)

04/06 0.94	04/16 0.09	04/25 0.01
04/07 0.29	04/17 0.12	04/26 0.02
04/08 0.11	04/18 0.06	
04/11 0.01	04/19 0.22	
04/12 0.31	04/20 0.02	
04/13 0.10	04/24 0.01	

STATION POSTED due to elevated bacteria count
STATION POSTED due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)

[2]Geometric means calculated for 5 or more samples per 30-day period.

Reviewed by: R Duggan

City and County of San Francisco
SFPUC Wastewater Enterprise
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Appendix O-TL2

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Mon/02	Tue/03	Sat/07	Sun/08	Mon/09	Tue/10	Mon/16	Mon/23	30-day Geometric Mean[2]
15	545	20	3076	7270	1014		63	292	463
15EAST	51	< 10	3448	305	86		109	31	107
16	20	10	4352	323	52		10	52	69
17	10				122		20	109	
18	20		7270	253	63		31	10	95
19	< 10		**12033**	1860	420		41	10	184
21.1	< 10		959		663	10	41	20	61
20			2755	97					
21			2613						
22			1046						

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥ 400** MPN/100 mL[1]

Location	Mon/02	Tue/03	Sat/07	Sun/08	Mon/09	Tue/10	Mon/16	Mon/23	30-day Geometric Mean[2]
15	20	< 10	**408**	**882**	41		< 10	< 10	44
15EAST	< 10	< 10	345	31	< 10		20	< 10	22
16	10	< 10	**583**	31	10		10	< 10	21
17	< 10				10		10	74	
18	10		**1017**	20	< 10		10	< 10	24
19	< 10		**1314**	135	216		10	< 10	58
21.1	< 10		10		393	< 10	20	10	21
20			238	10					
21			199						
22			98						

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥ 104** MPN/100 mL[1]

Location	Mon/02	Tue/03	Sat/07	Sun/08	Mon/09	Tue/10	Mon/16	Mon/23	30-day Geometric Mean[2]
15	**256**	< 10	85	**11199**	41		< 10	30	84
15EAST	**1019**	< 10	41	20	10		< 10	< 10	26
16	**158**	< 10	20	10	10		< 10	< 10	16
17	< 10				10		< 10	< 10	
18	< 10		**238**	10	10		20	< 10	19
19	< 10		**226**	63	< 10		< 10	< 10	23
21.1	10		10		**1500**	< 10	10	< 10	23
20			**108**	< 10					
21			85						
22			85						

Table 4. Beaches/Stations/Rainfall

Beaches	Stations
Baker Beach	15, 15EAST, 16
China Beach	17
Ocean Beach	18, 19, 20, 21, 21.1
Ft. Funston	22

Rainfall (in.)	
04/05	0.16
04/06	2.01
04/07	1.13
04/11	0.19
04/15	0.22
04/16	0.10

STATION POSTED due to elevated bacteria count
STATION POSTED due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)

[2]Geometric means calculated for 5 or more samples per 30-day period.

Reviewed by: R Duggan

City and County of San Francisco
SFPUC Wastewater Enterprise
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May 2016

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Mon/02	Tue/03	Mon/09	Mon/16	Mon/23	Tue/31	30-day Geometric Mean[2]
15	**10462**	189	813	52	457	1624	629
15EAST	< 10	41	41	52	75	< 10	29
16	20		10	20	< 10	< 10	13
17	< 10		20	< 10	20	10	13
18	10		< 10	10	10	41	13
19	10		20	< 10	20	20	15
21.1	< 10		10	< 10	< 10	< 10	10

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥ 400** MPN/100 mL[1]

Location	Mon/02	Tue/03	Mon/09	Mon/16	Mon/23	Tue/31	30-day Geometric Mean[2]
15	20	31	10	< 10	20	97	22
15EAST	< 10	10	20	< 10	< 10	< 10	11
16	< 10		< 10	< 10	< 10	< 10	10
17	< 10		< 10	< 10	< 10	< 10	10
18	< 10		< 10	< 10	10	10	10
19	< 10		20	< 10	10	10	11
21.1	< 10		10	< 10	< 10	< 10	10

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Mon/02	Tue/03	Mon/09	Mon/16	Mon/23	Tue/31	30-day Geometric Mean[2]
15	84	10	10	< 10	< 10	41	18
15EAST	< 10	< 10	< 10	< 10	< 10	< 10	10
16	< 10		< 10	< 10	< 10	< 10	10
17	10		< 10	< 10	< 10	< 10	10
18	< 10		< 10	< 10	< 10	< 10	10
19	< 10		< 10	< 10	10	< 10	10
21.1	< 10		< 10	10	< 10	< 10	10

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)
Baker Beach	15, 15EAST, 16	05/06 0.06
China Beach	17	05/07 0.04
Ocean Beach	18, 19, 21.1	

STATION POSTED due to elevated bacteria count
STATION POSTED due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)
[2]Geometric means calculated for 5 or more samples per 30-day period.

Reviewed by: RDuggan

City and County of San Francisco
SFPUC Wastewater Enterprise
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May 2017

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Mon/01	Mon/08	Mon/15	Mon/22	Tue/30	30-day Geometric Mean[2]
15	1872	457	275	63	1455	464
15EAST	110	63	52	95	< 10	51
16	< 10	10	< 10	52	30	17
17	< 10	30	10	41	20	19
18	20	< 10	31	< 10	20	17
19	10	10	10	749	< 10	24
21.1	< 10	10	20	< 10	< 10	11

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥ 400** MPN/100 mL[1]

Location	Mon/01	Mon/08	Mon/15	Mon/22	Tue/30	30-day Geometric Mean[2]
15	20	10	< 10	20	10	13
15EAST	< 10	< 10	< 10	10	< 10	10
16	< 10	10	< 10	< 10	< 10	10
17	< 10	< 10	< 10	10	< 10	10
18	10	< 10	10	< 10	10	10
19	10	10	< 10	84	< 10	15
21.1	< 10	< 10	20	< 10	< 10	11

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Mon/01	Mon/08	Mon/15	Mon/22	Tue/30	30-day Geometric Mean[2]
15	< 10	< 10	< 10	< 10	20	11
15EAST	< 10	< 10	< 10	< 10	< 10	10
16	< 10	< 10	< 10	< 10	< 10	10
17	< 10	< 10	< 10	10	< 10	10
18	< 10	< 10	< 10	< 10	< 10	10
19	< 10	< 10	< 10	10	< 10	10
21.1	< 10	< 10	< 10	< 10	< 10	10

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)
Baker Beach	15, 15EAST, 16	None
China Beach	17	
Ocean Beach	18, 19, 21.1	

STATION POSTED due to elevated bacteria count
STATION POSTED due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)
[2]Geometric means calculated for 5 or more samples per 30-day period.

Reviewed by: R. Duggan

City and County of San Francisco
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June 2016

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Mon/06	Mon/13	Mon/20	Mon/27	30-day Geometric Mean[2]
15	295	657	738	5475	
15EAST	120	85	31	10	
16	< 10	< 10	20	10	
17	10	< 10	< 10	41	
18	< 10	< 10	< 10	< 10	
19	10	< 10	< 10	10	
21.1	10	10	< 10	< 10	

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥ 400** MPN/100 mL[1]

Location	Mon/06	Mon/13	Mon/20	Mon/27	30-day Geometric Mean[2]
15	< 10	10	41	98	
15EAST	20	20	10	< 10	
16	< 10	< 10	< 10	< 10	
17	< 10	< 10	< 10	10	
18	< 10	< 10	< 10	< 10	
19	< 10	< 10	< 10	10	
21.1	< 10	< 10	< 10	< 10	

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Mon/06	Mon/13	Mon/20	Mon/27	30-day Geometric Mean[2]
15	< 10	< 10	20	41	
15EAST	20	< 10	< 10	< 10	
16	< 10	< 10	< 10	< 10	
17	10	< 10	< 10	10	
18	< 10	< 10	< 10	< 10	
19	41	< 10	< 10	< 10	
21.1	< 10	< 10	< 10	73	

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)
Baker Beach	15, 15EAST, 16	06/07 0.01
China Beach	17	06/08 0.01
Ocean Beach	18, 19, 21.1	

STATION POSTED due to elevated bacteria count
STATION POSTED due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)
[2]Geometric means calculated for 5 or more samples per 30-day period.

Reviewed by: R Duggan

City and County of San Francisco
SFPUC Wastewater Enterprise
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June 2017

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Mon/05	Mon/12	Mon/19	Mon/26	30-day Geometric Mean[2]
15	402	292	932	256	
15EAST	120	< 10	41	96	
16	52	< 10	10	20	
17	20	< 10	84	10	
18	< 10	41	10	10	
19	10	10	10	< 10	
21.1	< 10	10	10	< 10	

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥ 400** MPN/100 mL[1]

Location	Mon/05	Mon/12	Mon/19	Mon/26	30-day Geometric Mean[2]
15	10	< 10	20	20	
15EAST	20	< 10	20	52	
16	10	< 10	< 10	< 10	
17	< 10	< 10	< 10	< 10	
18	< 10	41	10	10	
19	10	< 10	< 10	< 10	
21.1	< 10	< 10	< 10	< 10	

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Mon/05	Mon/12	Mon/19	Mon/26	30-day Geometric Mean[2]
15	< 10	20	10	10	
15EAST	< 10	< 10	< 10	< 10	
16	< 10	< 10	< 10	< 10	
17	< 10	< 10	< 10	< 10	
18	< 10	< 10	< 10	< 10	
19	20	< 10	< 10	< 10	
21.1	< 10	< 10	< 10	< 10	

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)
Baker Beach	15, 15EAST, 16	06/08 0.2
China Beach	17	
Ocean Beach	18, 19, 21.1	

STATION POSTED due to elevated bacteria count
STATION POSTED due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)
[2]Geometric means calculated for 5 or more samples per 30-day period.

Reviewed by: R Duggan

City and County of San Francisco
SFPUC Wastewater Enterprise
Monthly Ocean Shoreline Bacteriological Report
July 2016

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Tue/05	Mon/11	Mon/18	Mon/25	30-day Geometric Mean[2]
15	86	369	75	1354	
15EAST	31	75	20	63	
16	10	< 10	10	10	
17	20	< 10	10	< 10	
18	10	< 10	10	< 10	
19	31	< 10	< 10	< 10	
21.1	31	< 10	10	10	

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥ 400** MPN/100 mL[1]

Location	Tue/05	Mon/11	Mon/18	Mon/25	30-day Geometric Mean[2]
15	< 10	20	10	10	
15EAST	10	< 10	< 10	10	
16	< 10	< 10	< 10	< 10	
17	10	< 10	< 10	< 10	
18	10	< 10	< 10	< 10	
19	20	< 10	< 10	< 10	
21.1	20	< 10	< 10	< 10	

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Tue/05	Mon/11	Mon/18	Mon/25	30-day Geometric Mean[2]
15	< 10	20	< 10	< 10	
15EAST	< 10	< 10	< 10	< 10	
16	< 10	< 10	< 10	< 10	
17	< 10	< 10	< 10	< 10	
18	< 10	< 10	< 10	< 10	
19	< 10	< 10	< 10	< 10	
21.1	< 10	10	< 10	< 10	

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)
Baker Beach	15, 15EAST, 16	07/08 0.01
China Beach	17	07/09 0.01
Ocean Beach	18, 19, 21.1	

STATION POSTED due to elevated bacteria count
STATION POSTED due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)
[2]Geometric means calculated for 5 or more samples per 30-day period.

Reviewed by R Duggan

City and County of San Francisco
SFPUC Wastewater Enterprise
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July 2017

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Wed/05	Mon/10	Mon/17	Mon/24	Mon/31	30-day Geometric Mean[2]
15	638	1259	1374	417	259	654
15EAST	20	20	156	120	< 10	38
16	< 10	10	63	10	10	14
17	41	< 10	< 10	10	10	13
18	< 10	10	10	10	20	11
19	10	20	10	86	< 10	18
21.1	20	20	10	41	< 10	17

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥ 400** MPN/100 mL[1]

Location	Wed/05	Mon/10	Mon/17	Mon/24	Mon/31	30-day Geometric Mean[2]
15	41	158	41	10	63	44
15EAST	< 10	< 10	< 10	20	< 10	11
16	< 10	10	63	< 10	< 10	14
17	< 10	< 10	< 10	< 10	< 10	10
18	< 10	< 10	< 10	10	10	10
19	10	< 10	< 10	63	< 10	14
21.1	20	10	< 10	31	< 10	14

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Wed/05	Mon/10	Mon/17	Mon/24	Mon/31	30-day Geometric Mean[2]
15	10	63	41	10	**144**	33
15EAST	< 10	< 10	10	< 10	51	14
16	< 10	< 10	63	< 10	< 10	14
17	10	< 10	< 10	< 10	< 10	10
18	< 10	< 10	< 10	< 10	< 10	10
19	< 10	10	< 10	10	< 10	10
21.1	< 10	< 10	< 10	< 10	< 10	10

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)
Baker Beach	15, 15EAST, 16	None
China Beach	17	
Ocean Beach	18, 19, 21.1	

STATION POSTED due to elevated bacteria count
STATION POSTED due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)
[2]Geometric means calculated for 5 or more samples per 30-day period.

Reviewed by: R Duggan

City and County of San Francisco
SFPUC Wastewater Enterprise
Monthly Ocean Shoreline Bacteriological Report
August 2016

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Mon/01	Tue/02	Mon/08	Mon/15	Mon/22	Fri/26	Mon/29	30-day Geometric Mean[2]
15	6131	211	2481	218	383		384	685
15EAST	52	20	1017	< 10	41		20	45
16	10		10	< 10	< 10		134	17
17	< 10		10	10	*	< 10	10	10
18	< 10		10	10	< 10		10	10
19	10		10	10	< 10		< 10	10
21.1	< 10		10	10	10		< 10	10

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥ 400** MPN/100 mL[1]

Location	Mon/01	Tue/02	Mon/08	Mon/15	Mon/22	Fri/26	Mon/29	30-day Geometric Mean[2]
15	**565**	20	< 10	10	20		20	28
15EAST	10	< 10	< 10	< 10	< 10		< 10	10
16	< 10		10	< 10	< 10		< 10	10
17	< 10		10	< 10	*	< 10	< 10	10
18	< 10		10	< 10	< 10		< 10	10
19	< 10		10	10	< 10		< 10	10
21.1	< 10		10	< 10	< 10		< 10	10

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Mon/01	Tue/02	Mon/08	Mon/15	Mon/22	Fri/26	Mon/29	30-day Geometric Mean[2]
15	**193**	10	< 10	< 10	10		41	21
15EAST	< 10	< 10	< 10	< 10	10		< 10	10
16	< 10		< 10	< 10	< 10		10	10
17	< 10		10	< 10	*	< 10	< 10	10
18	< 10		< 10	< 10	< 10		< 10	10
19	< 10		< 10	< 10	< 10		< 10	10
21.1	< 10		< 10	< 10	< 10		< 10	10

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)
Baker Beach	15, 15EAST, 16	08/05 0.01
China Beach	17	08/06 0.01
Ocean Beach	18, 19, 21.1	

STATION POSTED due to elevated bacteria count

STATION POSTED due to Combined Sewer Discharge

* Station sampled later in week due to restricted access by GGNRA.

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)

[2]Geometric means calculated for 5 or more samples per 30-day period.

Reviewed by: R Duggan

City and County of San Francisco
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Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Tue/01	Mon/07	Mon/14	Mon/21	Tue/22	Mon/28	30-day Geometric Mean[2]
15	1274	108	4106	9208	663	285	997
15EAST	< 10	1187	185	95	10	52	69
16		< 10	20	30		20	
17		10	< 10	< 10		10	
18		< 10	< 10	10		10	
19		10	10	< 10		< 10	
21.1		10	10	41		31	

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥ 400** MPN/100 mL[1]

Location	Tue/01	Mon/07	Mon/14	Mon/21	Tue/22	Mon/28	30-day Geometric Mean[2]
15	20	< 10	20	160	120	20	34
15EAST	< 10	< 10	10	10	10	< 10	10
16		< 10	< 10	10		< 10	
17		< 10	< 10	< 10		< 10	
18		< 10	< 10	10		10	
19		10	< 10	< 10		< 10	
21.1		10	10	10		10	

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Tue/01	Mon/07	Mon/14	Mon/21	Tue/22	Mon/28	30-day Geometric Mean[2]
15	< 10	10	41	**285**	73	< 10	31
15EAST	< 10	< 10	31	< 10	< 10	< 10	12
16		< 10	< 10	< 10		< 10	
17		< 10	< 10	< 10		10	
18		< 10	< 10	< 10		< 10	
19		< 10	< 10	< 10		< 10	
21.1		10	< 10	10		10	

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)
Baker Beach	15, 15EAST, 16	None
China Beach	17	
Ocean Beach	18, 19, 21.1	

STATION POSTED due to elevated bacteria count
STATION POSTED due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)
[2]Geometric means calculated for 5 or more samples per 30-day period.

Reviewed by: R. Duggan

City and County of San Francisco
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September 2016

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Tue/06	Wed/07	Thu/08	Mon/12	Mon/19	Tue/20	Mon/26	30-day Geometric Mean[2]
15	6867	5794	4884	350	7701	546	189	1768
15EAST	282	30	108	122	41	75	< 10	62
16	< 10			10	10		10	
17	< 10			20	10		< 10	
18	< 10			< 10	10		< 10	
19	10			< 10	10		< 10	
21.1	< 10			< 10	< 10		< 10	

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥ 400** MPN/100 mL[1]

Location	Tue/06	Wed/07	Thu/08	Mon/12	Mon/19	Tue/20	Mon/26	30-day Geometric Mean[2]
15	**426**	171	279	20	**410**	110	135	158
15EAST	20	10	20	10	< 10	20	< 10	13
16	< 10			< 10	10		10	
17	< 10			10	10		< 10	
18	< 10			< 10	< 10		< 10	
19	< 10			< 10	< 10		< 10	
21.1	< 10			< 10	< 10		< 10	

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Tue/06	Wed/07	Thu/08	Mon/12	Mon/19	Tue/20	Mon/26	30-day Geometric Mean[2]
15	**161**	**122**	98	31	**109**	20	10	54
15EAST	10	< 10	< 10	< 10	< 10	< 10	< 10	10
16	< 10			< 10	10		< 10	
17	< 10			< 10	< 10		< 10	
18	< 10			< 10	< 10		< 10	
19	< 10			< 10	< 10		< 10	
21.1	< 10			< 10	< 10		10	

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)
Baker Beach	15, 15EAST, 16	None
China Beach	17	
Ocean Beach	18, 19, 21.1	

STATION POSTED due to elevated bacteria count
STATION POSTED due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)

[2]Geometric means calculated for 5 or more samples per 30-day period.

Reviewed by: R. Duggan

City and County of San Francisco
SFPUC Wastewater Enterprise
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September 2017

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Tue/05	Mon/11	Mon/18	Mon/25	30-day Geometric Mean[2]
15	5794	987	1789	683	
15EAST	63	160	63	169	
16	< 10	10	10	10	
17	< 10	< 10	75	52	
18	10	10	< 10	< 10	
19	10	20	20	< 10	
21.1	41	30	< 10	10	

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥ 400** MPN/100 mL[1]

Location	Tue/05	Mon/11	Mon/18	Mon/25	30-day Geometric Mean[2]
15	63	20	121	30	
15EAST	30	10	< 10	63	
16	< 10	10	< 10	10	
17	< 10	< 10	< 10	< 10	
18	< 10	< 10	< 10	< 10	
19	< 10	20	< 10	< 10	
21.1	< 10	30	< 10	10	

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Tue/05	Mon/11	Mon/18	Mon/25	30-day Geometric Mean[2]
15	97	63	63	20	
15EAST	10	< 10	< 10	74	
16	< 10	< 10	< 10	20	
17	< 10	< 10	< 10	< 10	
18	< 10	< 10	< 10	< 10	
19	< 10	10	< 10	10	
21.1	< 10	< 10	< 10	< 10	

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)
Baker Beach	15, 15EAST, 16	09/11 0.34
China Beach	17	
Ocean Beach	18, 19, 21.1	

STATION POSTED due to elevated bacteria count
STATION POSTED due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)
[2]Geometric means calculated for 5 or more samples per 30-day period.

Reviewed by: R Duggan

City and County of San Francisco
SFPUC Wastewater Enterprise
Monthly Ocean Shoreline Bacteriological Report
October 2016

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Mon/03	Tue/11	Sun/16	Mon/17	Tue/18	Mon/24	Tue/25	Mon/31	30-day Geometric Mean[2]
15	146	199	246	231*		9804		6488	854
15EAST	< 10	10	31	218*		74		75	28
16	< 10	63	63	187*		< 10		20	24
17	10	52		933		373	10	20	58
18	< 10	10		670	132	< 10		86	44
19	< 10	20		132		< 10		20	22
21.1	< 10	< 10		173		31		31	28

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥ 400** MPN/100 mL[1]

Location	Mon/03	Tue/11	Sun/16	Mon/17	Tue/18	Mon/24	Tue/25	Mon/31	30-day Geometric Mean[2]
15	10	63	< 10	86*		31		110	29
15EAST	< 10	< 10	20	75*		< 10		< 10	11
16	< 10	41	10	20*		< 10		10	13
17	10	20		213		185	10	10	30
18	< 10	< 10		331	31	< 10		< 10	22
19	< 10	20		20		< 10		< 10	13
21.1	< 10	< 10		< 10		< 10		< 10	10

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Mon/03	Tue/11	Sun/16	Mon/17	Tue/18	Mon/24	Tue/25	Mon/31	30-day Geometric Mean[2]
15	< 10	20	< 10	< 10*		72		86	26
15EAST	< 10	10	< 10	20*		< 10		< 10	10
16	< 10	20	10	10*		< 10		< 10	11
17	10	< 10		30		**441**	< 10	< 10	23
18	< 10	10		**134**	10	< 10		10	15
19	< 10	10		31		< 10		10	13
21.1	< 10	< 10		< 10		< 10		< 10	10

Table 4. Beaches/Stations/Rainfall

Beaches	Stations
Baker Beach	15, 15EAST, 16
China Beach	17
Ocean Beach	18, 19, 21.1

Rainfall (in.)

10/02 0.01	10/16 0.64	10/28 0.29
10/03 0.01	10/17 0.01	10/29 0.05
10/12 0.01	10/18 0.01	10/30 0.49
10/13 0.01	10/24 0.02	
10/14 0.46	10/25 0.02	
10/15 0.34	10/27 0.55	

STATION POSTED due to elevated bacteria count
STATION POSTED due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)
[2]Geometric means calculated for 5 or more samples per 30-day period.

* Un-permitted discharge occurred at SeaCliff 2 due to power outage. Receiving water samples were collected and beaches remained posted. Five-day report submitted to RWQCB.

Reviewed by: RDuggan

City and County of San Francisco
SFPUC Wastewater Enterprise
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October 2017

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Mon/02	Tue/03	Tue/10	Mon/16	Mon/23	Mon/30	30-day Geometric Mean[2]
15	2247	213	52	148	119	820	267
15EAST	10	504	63	31	31	41	48
16	10		10	10	31	52	17
17	< 10		31	31	20	10	18
18	< 10		10	< 10	52	41	18
19	< 10		10	< 10	10	41	13
21.1	< 10		20	31	20	52	23

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥ 400** MPN/100 mL[1]

Location	Mon/02	Tue/03	Tue/10	Mon/16	Mon/23	Mon/30	30-day Geometric Mean[2]
15	41	20	20	20	31	52	28
15EAST	10	20	10	10	10	10	11
16	< 10		10	10	10	20	11
17	< 10		< 10	< 10	10	< 10	10
18	< 10		< 10	< 10	31	31	16
19	< 10		10	< 10	< 10	10	10
21.1	< 10		< 10	10	< 10	20	11

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Mon/02	Tue/03	Tue/10	Mon/16	Mon/23	Mon/30	30-day Geometric Mean[2]
15	**108**	< 10	< 10	10	< 10	20	17
15EAST	< 10	20	63	< 10	< 10	< 10	15
16	< 10		< 10	< 10	< 10	< 10	10
17	< 10		< 10	< 10	< 10	< 10	10
18	< 10		< 10	< 10	< 10	< 10	10
19	< 10		< 10	< 10	< 10	< 10	10
21.1	< 10		31	< 10	< 10	< 10	13

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)
Baker Beach	15, 15EAST, 16	10/19 0.18
China Beach	17	10/20 0.10
Ocean Beach	18, 19, 21.1	

STATION POSTED due to elevated bacteria count
STATION POSTED due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)
[2]Geometric means calculated for 5 or more samples per 30-day period.

Reviewed by: R. Duggan

City and County of San Francisco
SFPUC Wastewater Enterprise
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"November 2016"

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Mon/07	Mon/14	Tue/15	Wed/16	Mon/21	Tue/23	Wed/24	Mon/28	30-day Geometric Mean[2]
15	160	**12033**	4352	816	2755	**10462**	134	1723	1612
15EAST	41	41	10	20	158	144	52	85	49
16	< 10	120			84	145		41	57
17	20	10			109			108	
18	< 10	20			98			201	
19	20	20			301			279	
21.1	< 10	52			75			279	

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥ 400** MPN/100 mL[1]

Location	Mon/07	Mon/14	Tue/15	Wed/16	Mon/21	Tue/23	Wed/24	Mon/28	30-day Geometric Mean[2]
15	10	51	259	52	52	160	20	10	43
15EAST	< 10	< 10	< 10	10	10	< 10	10	< 10	10
16	< 10	< 10			10	20		< 10	11
17	10	< 10			41			30	
18	< 10	< 10			10			10	
19	< 10	10			98			41	
21.1	< 10	10			< 10			63	

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Mon/07	Mon/14	Tue/15	Wed/16	Mon/21	Tue/23	Wed/24	Mon/28	30-day Geometric Mean[2]
15	< 10	74	**269**	10	41	31	< 10	10	27
15EAST	< 10	< 10	10	< 10	< 10	10	< 10	< 10	10
16	10	< 10			< 10	< 10		< 10	10
17	< 10	< 10			< 10			< 10	
18	< 10	< 10			< 10			10	
19	< 10	< 10			< 10			< 10	
21.1	20	20			< 10			10	

Table 4. Beaches/Stations/Rainfall

Beaches	Stations
Baker Beach	15, 15EAST, 16
China Beach	17
Ocean Beach	18, 19, 21.1

Rainfall (in.)

11/01	0.01	11/26	0.62
11/02	0.01	11/27	0.09
11/19	0.37	11/28	0.09
11/20	0.43	11/30	0.05
11/22	0.15		

STATION POSTED due to elevated bacteria count
STATION POSTED due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)
[2]Geometric means calculated for 5 or more samples per 30-day period.

Reviewed by: R Duggan

Appendix O-TL2

City and County of San Francisco
SFPUC Wastewater Enterprise
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November 2017

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Mon/06	Mon/13	Tue/14	Thu/16	Fri/17	Mon/20	Mon/27	30-day Geometric Mean[2]
15	41	5475	272	2143	3654	31	1664	589
15EAST	52	10	31	97	158	20	169	50
16	41	41		63		52	10	35
17	74	31				52	41	
18	10	< 10		5794	272	10	41	63
19	63	< 10		**11199**	448	31	73	139
21.1	20	31		5794	292	10	74	96
20				9208	231			
21				**> 24196**	331			
22				**24196**	97			

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥ 400** MPN/100 mL[1]

Location	Mon/06	Mon/13	Tue/14	Thu/16	Fri/17	Mon/20	Mon/27	30-day Geometric Mean[2]
15	< 10	226	20	275	31	< 10	95	45
15EAST	< 10	< 10	10	20	20	< 10	144	18
16	10	10		< 10		< 10	< 10	10
17	20	10				10	< 10	
18	10	< 10		**959**	31	< 10	31	31
19	10	< 10		**3076**	41	< 10	< 10	33
21.1	< 10	20		**1296**	< 10	< 10	< 10	25
20				**2187**	10			
21				**12997**	31			
22				**2187**	< 10			

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥ 104** MPN/100 mL[1]

Location	Mon/06	Mon/13	Tue/14	Thu/16	Fri/17	Mon/20	Mon/27	30-day Geometric Mean[2]
15	< 10	**110**	20	**216**	97	< 10	31	39
15EAST	< 10	10	< 10	< 10	10	< 10	10	10
16	< 10	< 10		< 10		< 10	< 10	10
17	< 10	10				< 10	< 10	
18	< 10	< 10		**187**	10	< 10	< 10	16
19	10	10		**1071**	< 10	< 10	20	24
21.1	< 10	< 10		**408**	10	< 10	< 10	19
20				**651**	< 10			
21				**3076**	20			
22				**2809**	< 10			

Table 4. Beaches/Stations/Rainfall

Beaches	Stations
Baker Beach	15, 15EAST, 16
China Beach	17
Ocean Beach	18, 19, 20, 21, 21.1
Ft. Funston	22

Rainfall (in.)			
11/04	0.05	11/15	0.32
11/08	0.36	11/16	1.86
11/09	0.02	11/17	0.02
11/10	0.19	11/26	0.31
11/13	0.06	11/27	0.09

STATION POSTED due to elevated bacteria count
STATION POSTED due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)
[2]Geometric means calculated for 5 or more samples per 30-day period.

Reviewed by: H. Peterson

City and County of San Francisco
SFPUC Wastewater Enterprise
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December 2016

Appendix O-TL2

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Mon/05	Sat/10	Sun/11	Mon/12	Tue/13	Thu/15	Fri/16	Mon/19	Fri/23	Sat/24	Tue/27	30-day Geometric Mean[2]
15	5794			598				768			5794	
15EAST	< 10			110				85			31	
16	20			74				173			63	
17	< 10			213				52			41	
18	20			145		*	216	52	**		< 10	50
19	< 10			85		*	1145	663	**		10	92
21.1	30		677	85		*	546	31	**		< 10	81
20		*	727			*	364		**			
21			350			*	417		**			
22		*	538	*	86	*	327		**> 24196**	135		548

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥ 400** MPN/100 mL[1]

Location	Mon/05	Sat/10	Sun/11	Mon/12	Tue/13	Thu/15	Fri/16	Mon/19	Fri/23	Sat/24	Tue/27	30-day Geometric Mean[2]
15	75			41				10			63	
15EAST	< 10			31				< 10			20	
16	10			31				52			20	
17	< 10			52				10			10	
18	10			74		*	52	10	**		< 10	21
19	< 10			< 10		*	262	134	**		< 10	32
21.1	10		86	10		*	109	< 10	**		< 10	21
20		*	74			*	30		**			
21			97			*	98		**			
22		*	75	*	20	*	41		**2613**	31		87

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥ 104** MPN/100 mL[1]

Location	Mon/05	Sat/10	Sun/11	Mon/12	Tue/13	Thu/15	Fri/16	Mon/19	Fri/23	Sat/24	Tue/27	30-day Geometric Mean[2]
15	30			30				10			74	
15EAST	10			< 10				< 10			< 10	
16	< 10			10				20			< 10	
17	< 10			10				< 10			< 10	
18	< 10			41		*	< 10	< 10	**		< 10	13
19	< 10			20		*	52	10	**		< 10	16
21.1	20		10	< 10		*	31	< 10	**		< 10	14
20		*	31			*	20		**			
21			< 10			*	31		**			
22		*	**160**	*	31	*	< 10		**3076**	10		69

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)			
Baker Beach	15, 15EAST, 16	12/07	0.37	12/13	0.09
China Beach	17	12/08	1.21	12/14	0.10
Ocean Beach	18, 19, 20, 21, 21.1	12/09	0.09	12/15	1.22
Ft. Funston	22	12/10	0.85	12/23	1.05

Reviewed by: R Duggan

STATION POSTED due to elevated bacteria count
STATION POSTED due to Combined Sewer Discharge (CSD)
* STATION POSTED not sampled till the next day
STATION POSTED CSD occurred but no sampling
** CSD occurred; no posting or sampling

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)

[2]Geometric means calculated for 5 or more samples per 30-day period.

City and County of San Francisco
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December 2017

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Mon/04	Tue/05	Wed/06	Mon/11	Mon/18	Tue/26	Wed/27	30-day Geometric Mean[2]
15	**17329**	631	1850	213	2603	6488	2755	2132
15EAST	10	20	20	10	< 10	< 10	41	15
16	156			< 10	20	< 10		
17	10			< 10	10	31		
18	52			20	< 10	10		
19	63			20	10	< 10		
21.1	31			10	< 10	10		

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥ 400** MPN/100 mL[1]

Location	Mon/04	Tue/05	Wed/06	Mon/11	Mon/18	Tue/26	Wed/27	30-day Geometric Mean[2]
15	98	**464**	63	10	52	109	110	78
15EAST	< 10	< 10	< 10	< 10	< 10	< 10	10	10
16	< 10			< 10	< 10	< 10		
17	< 10			< 10	< 10	< 10		
18	31			10	< 10	10		
19	10			< 10	10	< 10		
21.1	20			< 10	< 10	10		

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Mon/04	Tue/05	Wed/06	Mon/11	Mon/18	Tue/26	Wed/27	30-day Geometric Mean[2]
15	20	52	10	< 10	63	**109**	10	26
15EAST	< 10	< 10	< 10	< 10	< 10	< 10	< 10	10
16	< 10			< 10	< 10	< 10		
17	< 10			< 10	< 10	< 10		
18	< 10			10	< 10	< 10		
19	< 10			< 10	< 10	< 10		
21.1	< 10			< 10	< 10	< 10		

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)
Baker Beach	15, 15EAST, 16	12/02 0.02
China Beach	17	12/20 0.14
Ocean Beach	18, 19, 21.1	

STATION POSTED due to elevated bacteria count
STATION POSTED due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)
[2]Geometric means calculated for 5 or more samples per 30-day period.

Reviewed by: R Duggan

Appendix O-TL2

City and County of San Francisco
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January 2019

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Mon/07	Mon/14	Thu/17	Fri/18	Tue/22	Mon/28	30-day Geometric Mean[2]
15	420	185	754		85	862	336
15EAST	355	52	233		20	30	76
16	181	86	98		31	31	68
17	*	*	*		*	< 10	
18	228	10	158		52	< 10	45
19	1081	< 10	1274		10	10	67
21.1	86	10	369		41	< 10	42
20	84		241				
21	259		3654	109			
22	*		2098	63			

Sampling/Posting issues
* No access to sites (17 & 22) due to partial Federal government shutdown China Beach and Fort Funston were posted on the web and hotline for 72 hrs after CSDs on 1/17 & 1/7, respectively

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥ 400** MPN/100 mL[1]

Location	Mon/07	Mon/14	Thu/17	Fri/18	Tue/22	Mon/28	30-day Geometric Mean[2]
15	41	30	74		< 10	63	36
15EAST	109	10	20		< 10	< 10	19
16	73	10	< 10		10	< 10	15
17	*	*	*		*	< 10	
18	31	< 10	< 10		< 10	< 10	13
19	218	< 10	134		< 10	10	31
21.1	< 10	< 10	146		< 10	< 10	17
20	< 10		20				
21	20		**1067**	20			
22	*		132	10			

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥ 104** MPN/100 mL[1]

Location	Mon/07	Mon/14	Thu/17	Fri/18	Tue/22	Mon/28	30-day Geometric Mean[2]
15	< 10	20	30		10	31	18
15EAST	< 10	< 10	10		10	< 10	10
16	10	< 10	20		< 10	< 10	11
17	*	*	*		*	< 10	
18	10	< 10	20		< 10	< 10	11
19	41	< 10	75		< 10	10	20
21.1	< 10	< 10	41		< 10	< 10	13
20	71		85				
21	< 10		**359**	10			
22	*		**120**	< 10			

Table 4. Beaches/Stations/Rainfall

Beaches	Stations
Baker Beach	15, 15EAST, 16
China Beach	17
Ocean Beach	18, 19, 20, 21, 21.1
Ft. Funston	22

Rainfall (in.)			
01/05	0.33	01/15	0.42
01/06	1.45	01/16	1.41
01/09	0.12	01/17	0.70
01/11	0.06	01/20	0.20
01/12	0.01	01/30	0.16
01/14	0.01	01/31	0.32

STATION POSTED due to elevated bacteria count
STATION POSTED due to Combined Sewer Discharge
* Station not accessible due to partial Federal government shutdown
[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)
[2]Geometric means calculated for 5 or more samples per 30-day period.

Reviewed by: R Duggan

City and County of San Francisco
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January 2020

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Mon/06	Mon/13	Thu/16	Fri/17	Sat/18	Tue/21	Mon/27
15	1086	5172				74	598
15EAST	10	31				10	< 10
16	< 10	10				31	10
17	< 10	31	**12033**	199		31	< 10
18	10	30	**> 24196**	226		52	10
19	< 10	95	**> 24196**	2282	309	75	41
21.1	< 10	41	4352	120		< 10	52
20			**> 24196**	216			
21			**> 24196**	1086			
22			**> 24196**	327			

Sampling/Posting issues
None

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥ 400** MPN/100 mL[1]

Location	Mon/06	Mon/13	Thu/16	Fri/17	Sat/18	Tue/21	Mon/27
15	20	41				< 10	31
15EAST	< 10	20				< 10	< 10
16	< 10	10				< 10	< 10
17	< 10	10	**2755**	63		< 10	< 10
18	10	< 10	**8164**	20		20	< 10
19	< 10	31	**> 24196**	**428**	75	20	< 10
21.1	< 10	20	**1046**	10		< 10	10
20			**6867**	41			
21			**> 24196**	275			
22			**> 24196**	41			

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥ 104** MPN/100 mL[1]

Location	Mon/06	Mon/13	Thu/16	Fri/17	Sat/18	Tue/21	Mon/27
15	30	41				< 10	10
15EAST	< 10	< 10				< 10	< 10
16	< 10	< 10				31	< 10
17	< 10	< 10	**446**	10		10	< 10
18	< 10	< 10	**1918**	31		< 10	< 10
19	< 10	< 10	**> 24196**	**121**	41	< 10	< 10
21.1	< 10	< 10	**650**	< 10		< 10	20
20			**1467**	10			
21			**> 24196**	96			
22			**24196**	10			

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)			
Baker Beach	15, 15EAST, 16	01/09	0.28	01/16	1.43
China Beach	17	01/11	0.21	01/21	0.06
Ocean Beach	18, 19, 20, 21, 21.1	01/13	0.17	01/26	0.23
Ft. Funston	22	01/14	0.01	01/28	0.02

STATION POSTED due to elevated bacteria count
STATION POSTED due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)
[2]Geometric means calculated for 5 or more samples per 30-day period.

Reviewed by: R Duggan

Appendix O-TL 2

City and County of San Francisco
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February 2019

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Sat/02	Mon/04	Mon/11	Wed/13	Thu/14	Fri/15	Tue/19	Mon/25	Tue/26	Wed/27
15	145	5172	160	**24196**	932		52	1515		1354
15EAST	187	146	20	**17329**	408		98	31		30
16	121	223	31	**24196**	727		63	20		31
17		187	63	**12997**	389		85	20		10
18		216	10	**> 24196**	216		20	31		
19		203	73	**> 24196**	41		< 10	4884	98	
21.1		364	74	1670	97		20	20		
20				**17329**	131					
21				**> 24196**	158					
22				**> 24196**	**> 24196**	369				

Sampling/Posting issues
Posting delayed a few hours at 15, 15E and 16 on February 2, 2019

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥ 400** MPN/100 mL[1]

Location	Sat/02	Mon/04	Mon/11	Wed/13	Thu/14	Fri/15	Tue/19	Mon/25	Tue/26	Wed/27
15	< 10	135	30	**6488**	110		10	97		41
15EAST	20	31	10	**6131**	161		< 10	< 10		10
16	< 10	20	31	**9208**	135		20	10		< 10
17		41	31	**3654**	134		10	10		< 10
18		52	10	**> 24196**	10		< 10	10		
19		20	41	**> 24196**	< 10		< 10	**2247**	10	
21.1		31	30	**723**	20		< 10	20		
20				**7701**	10					
21				**> 24196**	10					
22				**> 24196**	**1421**	86				

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥ 104** MPN/100 mL[1]

Location	Sat/02	Mon/04	Mon/11	Wed/13	Thu/14	Fri/15	Tue/19	Mon/25	Tue/26	Wed/27
15	20	31	20	**1782**	63		20	31		63
15EAST	20	20	< 10	**1081**	10		< 10	< 10		< 10
16	41	20	10	**1624**	41		31	< 10		10
17		10	< 10	**959**	52		< 10	10		< 10
18		< 10	< 10	**7270**	20		< 10	10		
19		< 10	< 10	**> 24196**	20		< 10	**2613**	< 10	
21.1		10	41	**189**	10		< 10	< 10		
20				**1616**	10					
21				**> 24196**	20					
22				**14136**	**1785**	< 10				

Table 4. Beaches/Stations/Rainfall

Beaches	Stations
Baker Beach	15, 15EAST, 16
China Beach	17
Ocean Beach	18, 19, 20, 21, 21.1
Ft. Funston	22

Rainfall (in.)

02/01	0.22	02/09	0.38	02/16	0.22
02/02	1.21	02/10	0.08	02/17	0.23
02/03	0.20	02/12	0.30	02/25	0.21
02/04	0.40	02/13	2.33	02/26	0.73
02/05	0.06	02/14	1.01	02/27	0.42
02/08	0.26	02/15	0.11		

STATION POSTED due to elevated bacteria count

STATION POSTED due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)

[2]Geometric means calculated for 5 or more samples per 30-day period.

Reviewed by: R Duggan

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Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Mon/03	Mon/10	Tue/18	Mon/24
15	2909	301	3873	75
15EAST	282	31	10	31
16	30	< 10	20	< 10
17	< 10	41	< 10	< 10
18	< 10	31	< 10	20
19	52	31	< 10	10
21.1	< 10	52	10	< 10

Sampling/Posting issues
None

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥ 400** MPN/100 mL[1]

Location	Mon/03	Mon/10	Tue/18	Mon/24
15	10	10	52	< 10
15EAST	< 10	< 10	< 10	10
16	< 10	< 10	< 10	< 10
17	< 10	10	< 10	< 10
18	< 10	10	< 10	10
19	< 10	< 10	< 10	< 10
21.1	< 10	41	< 10	< 10

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Mon/03	Mon/10	Tue/18	Mon/24
15	74	< 10	< 10	< 10
15EAST	10	< 10	< 10	< 10
16	< 10	< 10	< 10	< 10
17	< 10	< 10	< 10	< 10
18	< 10	< 10	< 10	< 10
19	< 10	10	< 10	< 10
21.1	< 10	< 10	< 10	< 10

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)
Baker Beach	15, 15EAST, 16	None
China Beach	17	
Ocean Beach	18, 19, 21.1	

STATION POSTED due to elevated bacteria count
STATION POSTED due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)

Reviewed by: R Duggan

City and County of San Francisco
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March 2019

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Mon/04	Wed/06	Mon/11	Mon/18	Mon/25	Wed/27	Thu/28
15	776	201	292	63	2224	**15531**	175
15EAST	173	98	148	31	63	272	
16	63	86	85	31	63	31	
17	135	122	75	31	41		
18	30		97	10	20		
19	74		63	63	20		
21.1	31		31	< 10	10		

Sampling/Posting issues
None

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥ 400** MPN/100 mL[1]

Location	Mon/04	Wed/06	Mon/11	Mon/18	Mon/25	Wed/27	Thu/28
15	31	20	< 10	31	63	**435**	10
15EAST	20	20	10	10	20	31	
16	10	< 10	< 10	10	10	10	
17	31	< 10	10	10	< 10		
18	< 10		20	< 10	< 10		
19	10		20	20	10		
21.1	< 10		20	< 10	10		

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Mon/04	Wed/06	Mon/11	Mon/18	Mon/25	Wed/27	Thu/28
15	31	20	31	10	52	**327**	10
15EAST	31	< 10	10	41	< 10	20	
16	< 10	< 10	< 10	20	20	< 10	
17	31	< 10	< 10	< 10	< 10		
18	< 10		< 10	20	< 10		
19	< 10		< 10	10	< 10		
21.1	10		< 10	< 10	< 10		

Table 4. Beaches/Stations/Rainfall

Beaches	Stations
Baker Beach	15, 15EAST, 16
China Beach	17
Ocean Beach	18, 19, 21.1

Rainfall (in.)			
03/01	0.02	03/10	0.12
03/02	0.79	03/20	0.83
03/03	0.04	03/22	0.46
03/04	0.08	03/23	0.12
03/05	0.40	03/25	0.15
03/06	0.65	03/26	0.12
03/07	0.03	03/27	0.17
03/09	0.38		

STATION POSTED due to elevated bacteria count

STATION POSTED due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)

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City and County of San Francisco
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Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Mon/02	Mon/09	Wed/11	Tue/17	Mon/23	Mon/30
15	676	183		20	10	355
15EAST	20	52		< 10	31	< 10
16	< 10	158		< 10	31	< 10
17	20	< 10		< 10	31	< 10
18	< 10	< 10		< 10	< 10	< 10
19	20	31	10	10	10	10
21.1	31	10		31	10	20

Sampling/Posting issues
None

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥ 400** MPN/100 mL[1]

Location	Mon/02	Mon/09	Wed/11	Tue/17	Mon/23	Mon/30
15	20	< 10		< 10	< 10	< 10
15EAST	10	10		< 10	< 10	< 10
16	< 10	< 10		< 10	< 10	< 10
17	10	< 10		< 10	20	< 10
18	< 10	< 10		< 10	< 10	< 10
19	20	< 10	< 10	10	< 10	10
21.1	< 10	10		< 10	< 10	< 10

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Mon/02	Mon/09	Wed/11	Tue/17	Mon/23	Mon/30
15	31	< 10		10	< 10	10
15EAST	10	< 10		< 10	< 10	20
16	10	< 10		< 10	< 10	< 10
17	10	< 10		< 10	10	< 10
18	< 10	< 10		< 10	< 10	< 10
19	< 10	< 10	< 10	31	< 10	< 10
21.1	10	< 10		< 10	< 10	< 10

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)			
Baker Beach	15, 15EAST, 16	03/07	0.19	03/18	0.06
China Beach	17	03/14	0.32	03/24	0.08
Ocean Beach	18, 19, 21.1	03/15	0.24	03/28	0.10
		03/16	0.08	03/29	0.25
		03/17	0.12		

STATION POSTED due to elevated bacteria count
STATION POSTED due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)

Reviewed by: R Duggan

City and County of San Francisco
SFPUC Wastewater Enterprise
Monthly Ocean Shoreline Bacteriological Report
April 2019

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Mon/01	Mon/08	Mon/15	Mon/22	Mon/29
15	3130	1222	199	723	393
15EAST	10	10	< 10	95	20
16	175	10	146	10	20
17	122	41	< 10	20	20
18	< 10	31	< 10	10	< 10
19	< 10	< 10	< 10	< 10	10
21.1	< 10	31	< 10	< 10	< 10

Sampling/Posting issues
None

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥ 400** MPN/100 mL[1]

Location	Mon/01	Mon/08	Mon/15	Mon/22	Mon/29
15	63	20	10	52	20
15EAST	< 10	< 10	< 10	< 10	< 10
16	20	< 10	10	10	10
17	20	20	< 10	< 10	< 10
18	< 10	10	< 10	10	< 10
19	< 10	< 10	< 10	< 10	10
21.1	< 10	< 10	< 10	< 10	< 10

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Mon/01	Mon/08	Mon/15	Mon/22	Mon/29
15	86	20	< 10	10	< 10
15EAST	< 10	< 10	< 10	< 10	< 10
16	10	< 10	< 10	< 10	< 10
17	< 10	< 10	< 10	< 10	< 10
18	10	< 10	< 10	< 10	< 10
19	< 10	< 10	< 10	< 10	< 10
21.1	< 10	< 10	< 10	< 10	10

Table 4. Beaches/Stations/Rainfall

Beaches	Stations
Baker Beach	15, 15EAST, 16
China Beach	17
Ocean Beach	18, 19, 21.1

Rainfall (in.)			
04/01	0.02	04/08	0.04
04/02	0.09	04/09	0.01
04/04	0.09	04/15	0.04
04/05	0.21	04/16	0.06
04/06	0.01		

STATION POSTED due to elevated bacteria count

STATION POSTED due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)

Reviewed by R Duggan

City and County of San Francisco
SFPUC Wastewater Enterprise
Monthly Ocean Shoreline Bacteriological Report
April 2020

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Mon/06	Mon/13	Mon/20	Mon/27	Tue/28
15	368	908	697	6867	10
15EAST	20	< 10	20	231	< 10
16	41	< 10	148	< 10	
17	84	< 10	20	< 10	
18	10	10	< 10	10	
19	< 10	< 10	10	< 10	
21.1	< 10	< 10	< 10	< 10	

Sampling/Posting issues
None

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥ 400** MPN/100 mL[1]

Location	Mon/06	Mon/13	Mon/20	Mon/27	Tue/28
15	< 10	< 10	< 10	**624**	< 10
15EAST	< 10	< 10	< 10	86	< 10
16	< 10	< 10	< 10	< 10	
17	10	< 10	< 10	< 10	
18	< 10	10	< 10	< 10	
19	< 10	< 10	< 10	< 10	
21.1	< 10	< 10	< 10	< 10	

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Mon/06	Mon/13	Mon/20	Mon/27	Tue/28
15	10	< 10	< 10	**269**	< 10
15EAST	< 10	< 10	< 10	**122**	< 10
16	< 10	< 10	< 10	< 10	
17	< 10	< 10	< 10	< 10	
18	20	< 10	< 10	< 10	
19	< 10	< 10	< 10	< 10	
21.1	10	< 10	< 10	< 10	

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)
Baker Beach	15, 15EAST, 16	04/04 0.19
China Beach	17	04/05 0.16
Ocean Beach	18, 19, 21.1	04/06 0.36

STATION POSTED due to elevated bacteria count

STATION POSTED due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)

Reviewed by: R Duggan

Monthly Ocean Shoreline Bacteriological Report
April/May 2018

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Mon 4/30	Tues/01	Mon/07	Mon/14	Mon/21	Tues/29	30-day Geometric Mean[2]
15	697	5475	5475	3873	457	7701	2565
15EAST	120	20	74	31	121	30	52
16	10		10	10	31	< 10	13
17	< 10		< 10	41	31	< 10	17
18	< 10		< 10	< 10	10	< 10	10
19	20		< 10	< 10	< 10	< 10	11
21.1	20		< 10	< 10	< 10	10	11

Sampling/Posting issues
None

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥ 400** MPN/100 mL[1]

Location	Mon 4/30	Tues/01	Mon/07	Mon/14	Mon/21	Tues/29	30-day Geometric Mean[2]
15	10	63	41	75	20	10	27
15EAST	10	< 10	10	< 10	< 10	< 10	10
16	< 10		< 10	10	< 10	< 10	10
17	< 10		< 10	41	20	< 10	15
18	< 10		< 10	< 10	10	< 10	10
19	10		< 10	< 10	< 10	< 10	10
21.1	< 10		< 10	< 10	< 10	< 10	10

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Mon 4/30	Tues/01	Mon/07	Mon/14	Mon/21	Tues/29	30-day Geometric Mean[2]
15	**231**	52	41	41	10	20	40
15EAST	< 10	< 10	< 10	< 10	< 10	< 10	10
16	< 10		< 10	< 10	< 10	< 10	10
17	< 10		< 10	< 10	< 10	< 10	10
18	< 10		< 10	< 10	< 10	< 10	10
19	< 10		< 10	< 10	< 10	< 10	10
21.1	< 10		20	< 10	< 10	< 10	11

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)
Baker Beach	15, 15EAST, 16	05/09 0.01
China Beach	17	05/23 0.01
Ocean Beach	18, 19, 21.1	

STATION POSTED due to elevated bacteria count
STATION POSTED due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)
[2]Geometric means calculated for 5 or more samples per 30-day period.

Reviewed by: D O'Donohue

City and County of San Francisco
SFPUC Wastewater Enterprise
Monthly Ocean Shoreline Bacteriological Report
May 2019

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Mon/06	Mon/13	Mon/20	Tue/28
15	1043	663	480	2909
15EAST	41	10	41	84
16	< 10	74	158	< 10
17	10	< 10	20	< 10
18	< 10	10	52	< 10
19	10	10	121	< 10
21.1	10	< 10	213	< 10

Sampling/Posting issues
None

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥ 400** MPN/100 mL[1]

Location	Mon/06	Mon/13	Mon/20	Tue/28
15	63	41	10	41
15EAST	10	10	< 10	< 10
16	< 10	31	20	< 10
17	< 10	< 10	< 10	< 10
18	< 10	10	10	< 10
19	10	< 10	< 10	< 10
21.1	< 10	< 10	20	< 10

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Mon/06	Mon/13	Mon/20	Tue/28
15	< 10	85	< 10	20
15EAST	< 10	< 10	10	< 10
16	< 10	< 10	< 10	< 10
17	10	< 10	< 10	10
18	< 10	< 10	< 10	< 10
19	< 10	10	10	< 10
21.1	< 10	< 10	< 10	10

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)
Baker Beach	15, 15EAST, 16	05/15 0.49
China Beach	17	05/16 0.15
Ocean Beach	18, 19, 21.1	05/18 0.75
		05/19 0.17
		05/21 0.28

STATION POSTED due to elevated bacteria count
STATION POSTED due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)

Reviewed by R Duggan

City and County of San Francisco
SFPUC Wastewater Enterprise
Monthly Ocean Shoreline Bacteriological Report
June 2018

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Mon/04	Mon/11	Tue/12	Mon/18	Mon/25	30-day Geometric Mean[2]
15	4352	175		1483	9208	
15EAST	108	52		20	216	
16	< 10	20		< 10	< 10	
17	10	226	< 10	20	< 10	21
18	< 10	< 10		10	31	
19	< 10	< 10		< 10	< 10	
21.1	< 10	< 10		< 10	< 10	

Sampling/Posting issues
None

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥ 400** MPN/100 mL[1]

Location	Mon/04	Mon/11	Tue/12	Mon/18	Mon/25	30-day Geometric Mean[2]
15	31	< 10		20	20	
15EAST	< 10	10		< 10	< 10	
16	< 10	< 10		< 10	< 10	
17	< 10	< 10	< 10	< 10	< 10	10
18	< 10	< 10		< 10	31	
19	< 10	< 10		< 10	< 10	
21.1	< 10	< 10		< 10	< 10	

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Mon/04	Mon/11	Tue/12	Mon/18	Mon/25	30-day Geometric Mean[2]
15	63	< 10		31	20	
15EAST	10	< 10		10	< 10	
16	< 10	< 10		< 10	< 10	
17	< 10	**435**	< 10	< 10	< 10	21
18	< 10	< 10		< 10	< 10	
19	10	< 10		< 10	< 10	
21.1	< 10	< 10		< 10	< 10	

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)
Baker Beach	15, 15EAST, 16	06/09 0.01
China Beach	17	
Ocean Beach	18, 19, 21.1	

STATION POSTED due to elevated bacteria count
STATION POSTED due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)
[2]Geometric means calculated for 5 or more samples per 30-day period.

Reviewed by: RDuggan

City and County of San Francisco
SFPUC Wastewater Enterprise
Monthly Ocean Shoreline Bacteriological Report
June 2019

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Mon/03	Tue/04	Mon/10	Tue/11	Wed/12	Mon/17	Tue/18	Mon/24
15	459		2489		2382	4786	185	933
15EAST	41		10			132	201	52
16	10		10			51		< 10
17	10		20			85		< 10
18	< 10		10			10		< 10
19	1043	< 10	10			131		10
21.1	< 10		< 10	< 10		< 10		< 10

Sampling/Posting issues
None

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥ 400** MPN/100 mL[1]

Location	Mon/03	Tue/04	Mon/10	Tue/11	Wed/12	Mon/17	Tue/18	Mon/24
15	< 10		30		20	301	< 10	10
15EAST	< 10		< 10			< 10	187	< 10
16	10		< 10			10		< 10
17	< 10		< 10			20		< 10
18	< 10		< 10			10		< 10
19	**959**	< 10	< 10			< 10		10
21.1	< 10		< 10	< 10		< 10		< 10

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Mon/03	Tue/04	Mon/10	Tue/11	Wed/12	Mon/17	Tue/18	Mon/24
15	< 10		10		10	**794**	< 10	< 10
15EAST	< 10		< 10			< 10	< 10	< 10
16	< 10		< 10			< 10		< 10
17	< 10		< 10			< 10		< 10
18	10		< 10			10		< 10
19	< 10	10	< 10			< 10		< 10
21.1	< 10		10	< 10		10		< 10

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)
Baker Beach	15, 15EAST, 16	None
China Beach	17	
Ocean Beach	18, 19, 21.1	

STATION POSTED due to elevated bacteria count
STATION POSTED due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)

Reviewed by: R Duggan

City and County of San Francisco
SFPUC Wastewater Enterprise
Monthly Ocean Shoreline Bacteriological Report
July 2018

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Mon/02	Mon/09	Mon/16	Mon/23	Tue/24	Mon/30	30-day Geometric Mean[2]
15	1191	7701	203	9208	97	521	976
15EAST	10	20	10	31	< 10	20	15
16	10	< 10	10	41		10	13
17	< 10	< 10	10	63		< 10	14
18	< 10	< 10	30	< 10		31	16
19	20	< 10	20	20		20	17
21.1	10	< 10	10	< 10		31	13

Sampling/Posting issues
None

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥ 400** MPN/100 mL[1]

Location	Mon/02	Mon/09	Mon/16	Mon/23	Tue/24	Mon/30	30-day Geometric Mean[2]
15	10	41	20	317	< 10	10	25
15EAST	< 10	< 10	< 10	20	< 10	< 10	11
16	10	< 10	10	< 10		< 10	10
17	< 10	< 10	< 10	63		< 10	14
18	< 10	< 10	20	< 10		20	13
19	< 10	< 10	20	10		20	13
21.1	< 10	< 10	10	< 10		10	10

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Mon/02	Mon/09	Mon/16	Mon/23	Tue/24	Mon/30	30-day Geometric Mean[2]
15	86	63	10	**299**	10	52	45
15EAST	< 10	< 10	< 10	10	< 10	< 10	10
16	< 10	< 10	< 10	< 10		< 10	10
17	< 10	< 10	< 10	< 10		< 10	10
18	< 10	< 10	< 10	< 10		< 10	10
19	< 10	< 10	< 10	< 10		< 10	10
21.1	< 10	< 10	< 10	< 10		< 10	10

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)
Baker Beach	15, 15EAST, 16	None
China Beach	17	
Ocean Beach	18, 19, 21.1	

STATION POSTED due to elevated bacteria count
STATION POSTED due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)
[2]Geometric means calculated for 5 or more samples per 30-day period.

Reviewed by: R Duggan

City and County of San Francisco
SFPUC Wastewater Enterprise
Monthly Ocean Shoreline Bacteriological Report
July 2019

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Mon/01	Tue/02	Mon/08	Tue/09	Mon/15	Mon/22	Wed/24	Mon/29	Tue/30
15	4160	10	4884	75	31	4106	4569	428	
15EAST	98	< 10	41	< 10	10	63		< 10	
16	< 10		< 10		< 10	< 10		20	
17	< 10		52		< 10	< 10		< 10	
18	< 10		31		31	< 10		< 10	< 10
19	10		< 10		< 10	< 10		< 10	
21.1	< 10		< 10		10	20		< 10	10

Sampling/Posting issues
None

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥ 400** MPN/100 mL[1]

Location	Mon/01	Tue/02	Mon/08	Tue/09	Mon/15	Mon/22	Wed/24	Mon/29	Tue/30
15	84	< 10	41	10	< 10	31	10	< 10	
15EAST	< 10	< 10	10	< 10	10	20		< 10	
16	< 10		< 10		< 10	< 10		< 10	
17	< 10		30		< 10	< 10		< 10	
18	< 10		31		31	< 10		< 10	< 10
19	10		< 10		< 10	< 10		< 10	
21.1	< 10		< 10		10	< 10		< 10	< 10

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Mon/01	Tue/02	Mon/08	Tue/09	Mon/15	Mon/22	Wed/24	Mon/29	Tue/30
15	**110**	< 10	**132**	< 10	< 10	85	20	< 10	
15EAST	< 10	< 10	10	< 10	< 10	10		20	
16	< 10		< 10		< 10	< 10		< 10	
17	10		< 10		< 10	< 10		10	
18	10		10		< 10	< 10		< 10	< 10
19	< 10		< 10		< 10	< 10		< 10	
21.1	20		10		< 10	< 10		< 10	< 10

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)
Baker Beach	15, 15EAST, 16	07/11 0.01
China Beach	17	07/12 0.01
Ocean Beach	18, 19, 21.1	

STATION POSTED due to elevated bacteria count
STATION POSTED due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)

Reviewed by: R Duggan

City and County of San Francisco
SFPUC Wastewater Enterprise
Monthly Ocean Shoreline Bacteriological Report
August 2018

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Mon/06	Mon/13	Mon/20	Mon/27	30-day Geometric Mean[2]
15	528	657	216	336	
15EAST	20	10	31	279	
16	< 10	10	20	52	
17	< 10	31	10	10	
18	41	20	10	10	
19	10	20	384	31	
21.1	< 10	10	41	< 10	

Sampling/Posting issues
None

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥ 400** MPN/100 mL[1]

Location	Mon/06	Mon/13	Mon/20	Mon/27	30-day Geometric Mean[2]
15	< 10	< 10	10	85	
15EAST	10	< 10	< 10	20	
16	< 10	< 10	< 10	10	
17	< 10	< 10	< 10	< 10	
18	< 10	< 10	< 10	< 10	
19	< 10	10	216	31	
21.1	< 10	10	10	< 10	

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Mon/06	Mon/13	Mon/20	Mon/27	30-day Geometric Mean[2]
15	52	10	10	86	
15EAST	< 10	< 10	10	20	
16	< 10	< 10	< 10	< 10	
17	< 10	< 10	< 10	< 10	
18	< 10	< 10	10	< 10	
19	< 10	< 10	< 10	< 10	
21.1	< 10	10	< 10	< 10	

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)
Baker Beach	15, 15EAST, 16	08/28 0.01
China Beach	17	
Ocean Beach	18, 19, 21.1	

STATION POSTED due to elevated bacteria count
STATION POSTED due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)
[2]Geometric means calculated for 5 or more samples per 30-day period.

Reviewed by: R Duggan

City and County of San Francisco
SFPUC Wastewater Enterprise
Monthly Ocean Shoreline Bacteriological Report
August 2019

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Mon/05	Wed/07	Mon/12	Mon/19	Mon/26
15	3448	700	< 10	1722	1782
15EAST	10		908	63	31
16	20		74	20	41
17	< 10		< 10	< 10	10
18	< 10		20	< 10	10
19	< 10		< 10	< 10	< 10
21.1	< 10		< 10	< 10	< 10

Sampling/Posting issues
None

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥ 400** MPN/100 mL[1]

Location	Mon/05	Wed/07	Mon/12	Mon/19	Mon/26
15	10	41	< 10	109	< 10
15EAST	< 10		31	10	20
16	< 10		10	< 10	< 10
17	< 10		< 10	< 10	10
18	< 10		< 10	< 10	< 10
19	< 10		< 10	< 10	< 10
21.1	< 10		< 10	< 10	< 10

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Mon/05	Wed/07	Mon/12	Mon/19	Mon/26
15	74	< 10	< 10	30	63
15EAST	< 10		10	< 10	< 10
16	< 10		< 10	< 10	< 10
17	< 10		< 10	< 10	< 10
18	< 10		< 10	< 10	< 10
19	< 10		< 10	< 10	< 10
21.1	< 10		< 10	< 10	< 10

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)
Baker Beach	15, 15EAST, 16	None
China Beach	17	
Ocean Beach	18, 19, 21.1	

STATION POSTED due to elevated bacteria count

STATION POSTED due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)

Reviewed by: R Duggan

Appendix O-TL2

City and County of San Francisco
SFPUC Wastewater Enterprise
Monthly Ocean Shoreline Bacteriological Report
September 2018

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Tue/04	Mon/10	Mon/17	Mon/24	30-day Geometric Mean[2]
15	2603	1333	3873	20	
15EAST	10	20	10	< 10	
16	52	< 10	62	72	
17	31	< 10	< 10	< 10	
18	< 10	< 10	< 10	20	
19	31	10	< 10	10	
21.1	10	< 10	20	< 10	

Sampling/Posting issues
None

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥ 400** MPN/100 mL[1]

Location	Tue/04	Mon/10	Mon/17	Mon/24	30-day Geometric Mean[2]
15	52	63	52	10	
15EAST	< 10	< 10	10	< 10	
16	< 10	< 10	< 10	10	
17	10	< 10	< 10	< 10	
18	< 10	< 10	< 10	10	
19	< 10	10	< 10	10	
21.1	10	< 10	10	< 10	

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Tue/04	Mon/10	Mon/17	Mon/24	30-day Geometric Mean[2]
15	63	63	85	< 10	
15EAST	< 10	10	< 10	< 10	
16	< 10	< 10	20	20	
17	< 10	< 10	< 10	< 10	
18	10	< 10	< 10	< 10	
19	< 10	< 10	10	10	
21.1	< 10	< 10	< 10	< 10	

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)
Baker Beach	15, 15EAST, 16	None
China Beach	17	
Ocean Beach	18, 19, 21.1	

STATION POSTED due to elevated bacteria count
STATION POSTED due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)
[2]Geometric means calculated for 5 or more samples per 30-day period.

Reviewed by: R Duggan

City and County of San Francisco
SFPUC Wastewater Enterprise
Monthly Ocean Shoreline Bacteriological Report
September 2019

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Tue/03	Mon/09	Mon/16	Mon/23	Mon/30
15	1658	315	839	345	3130
15EAST	10	31	161	20	20
16	10	< 10	20	41	31
17	< 10	41	< 10	20	< 10
18	31	< 10	31	52	41
19	< 10	10	10	< 10	< 10
21.1	10	10	< 10	< 10	31

Sampling/Posting issues
None

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥ 400** MPN/100 mL[1]

Location	Tue/03	Mon/09	Mon/16	Mon/23	Mon/30
15	20	10	52	20	31
15EAST	< 10	10	20	< 10	< 10
16	10	< 10	< 10	< 10	< 10
17	< 10	10	< 10	< 10	< 10
18	< 10	< 10	20	10	20
19	< 10	10	< 10	< 10	< 10
21.1	< 10	10	< 10	< 10	20

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Tue/03	Mon/09	Mon/16	Mon/23	Mon/30
15	41	< 10	10	10	10
15EAST	< 10	< 10	10	< 10	10
16	< 10	< 10	< 10	20	< 10
17	10	10	< 10	< 10	< 10
18	< 10	< 10	< 10	< 10	< 10
19	< 10	< 10	< 10	< 10	< 10
21.1	< 10	< 10	< 10	< 10	< 10

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)
Baker Beach	15, 15EAST, 16	09/16 0.07
China Beach	17	09/18 0.02
Ocean Beach	18, 19, 21.1	09/27 0.01

STATION POSTED due to elevated bacteria count
STATION POSTED due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)

Reviewed by: H Peterson

City and County of San Francisco
SFPUC Wastewater Enterprise
Monthly Ocean Shoreline Bacteriological Report
October 2019

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Mon/07	Tue/15	Wed/16	Thu/17	Mon/21	Mon/28
15	1850	6488	813		266	31
15EAST	31	10	31	311	41	52
16	110	10			< 10	31
17	30	10			< 10	20
18	10	20			10	10
19	10	< 10			< 10	84
21.1	< 10	10			< 10	< 10

Sampling/Posting issues
None

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥ 400** MPN/100 mL[1]

Location	Mon/07	Tue/15	Wed/16	Thu/17	Mon/21	Mon/28
15	201	158	75		< 10	< 10
15EAST	10	< 10	20	181	< 10	< 10
16	52	10			< 10	< 10
17	10	10			< 10	20
18	10	10			10	< 10
19	< 10	< 10			< 10	< 10
21.1	< 10	10			< 10	< 10

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Mon/07	Tue/15	Wed/16	Thu/17	Mon/21	Mon/28
15	< 10	**428**	20		< 10	< 10
15EAST	< 10	< 10	**109**	73	< 10	10
16	< 10	< 10			< 10	10
17	< 10	< 10			< 10	< 10
18	20	< 10			< 10	< 10
19	< 10	< 10			< 10	10
21.1	10	< 10			< 10	10

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)
Baker Beach	15, 15EAST, 16	
China Beach	17	
Ocean Beach	18, 19, 21.1	

STATION POSTED due to elevated bacteria count
STATION POSTED due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)

Reviewed by: Rduggan

City and County of San Francisco
SFPUC Wastewater Enterprise
Monthly Ocean Shoreline Bacteriological Report
October 2018

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Mon/01	Tue/02	Tue/09	Mon/15	Mon/22	Mon/29	Tue/30	30-day Geometric Mean[2]
15	228		712	221	< 10	3255	228	254
15EAST	20		110	10	345	20	< 10	34
16	31		10	20	52	41		27
17	< 10		< 10	20	< 10	10		11
18	< 10		< 10	< 10	< 10	< 10		10
19	20		10	< 10	20	20		15
21.1	41	414	10	< 10	10	75		20

Sampling/Posting issues
None

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥ 400** MPN/100 mL[1]

Location	Mon/01	Tue/02	Tue/09	Mon/15	Mon/22	Mon/29	Tue/30	30-day Geometric Mean[2]
15	< 10		10	20	< 10	85	< 10	16
15EAST	< 10		10	< 10	20	< 10	< 10	11
16	20		< 10	20	< 10	< 10		13
17	< 10		< 10	20	< 10	10		11
18	< 10		< 10	< 10	< 10	< 10		10
19	20		< 10	< 10	10	< 10		11
21.1	31	< 10	< 10	< 10	< 10	10		13

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Mon/01	Tue/02	Tue/09	Mon/15	Mon/22	Mon/29	Tue/30	30-day Geometric Mean[2]
15	10		< 10	41	< 10	**295**	10	22
15EAST	< 10		< 10	< 10	10	< 10	< 10	10
16	< 10		< 10	10	< 10	< 10		10
17	< 10		10	< 10	< 10	< 10		10
18	< 10		< 10	< 10	< 10	< 10		10
19	10		< 10	< 10	20	10		11
21.1	< 10	20	< 10	< 10	10	10		10

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)
Baker Beach	15, 15EAST, 16	10/02 0.37
China Beach	17	
Ocean Beach	18, 19, 21.1	

STATION POSTED due to elevated bacteria count
STATION POSTED due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)
[2]Geometric means calculated for 5 or more samples per 30-day period.

Reviewed by: R Duggan

City and County of San Francisco
SFPUC Wastewater Enterprise
Monthly Ocean Shoreline Bacteriological Report
November 2019

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Mon/04	Tue/12	Mon/18	Mon/25	Tue/26	Wed/27	Thu/28	Fri/29
15	759	368	256	4884	3255	75		
15EAST	52	31	134	52	30	74	75	
16	51	31	10	97		144	134	
17	20	< 10	< 10	187	41	487	122	
18	20	< 10	10	< 10		109		
19	10	10	< 10	74	20	613	98	
21.1	< 10	< 10	10	98	52	122		
20						275	121	
21						183		** 1076
22						*	75	

Sampling/Posting issues
* Sampled the next day due to high tide ** Re-posted and resampled due to elevated final bacterial result

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥ 400** MPN/100 mL[1]

Location	Mon/04	Tue/12	Mon/18	Mon/25	Tue/26	Wed/27	Thu/28	Fri/29
15	10	< 10	20	120	63	10		
15EAST	< 10	20	10	20	10	20	20	
16	< 10	10	< 10	41		< 10	10	
17	< 10	< 10	< 10	135	31	121	< 10	
18	< 10	< 10	10	< 10		41		
19	10	10	< 10	10	10	148	20	
21.1	< 10	< 10	< 10	63	10	20		
20						120	20	
21						20		** 183
22						*	20	

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥ 104** MPN/100 mL[1]

Location	Mon/04	Tue/12	Mon/18	Mon/25	Tue/26	Wed/27	Thu/28	Fri/29
15	10	10	10	**345**	169	75		
15EAST	< 10	< 10	< 10	52	97	**146**	10	
16	< 10	< 10	< 10	< 10		**122**	52	
17	< 10	10	10	**259**	20	**199**	< 10	
18	< 10	< 10	< 10	10		98		
19	10	10	< 10	**1354**	< 10	**181**	31	
21.1	< 10	< 10	< 10	**110**	20	63		
20						**243**	10	
21						**119**		** 85
22						*	10	

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)			
Baker Beach	15, 15EAST, 16	11/14	0.01	11/28	0.03
China Beach	17	11/26	0.79	11/29	0.07
Ocean Beach	18, 19, 20, 21, 21.1	11/27	0.16	11/30	0.15
Ft. Funston	22				

STATION POSTED due to elevated bacteria count
STATION POSTED due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)

Reviewed by: R Duggan

Appendix O-TL2

City and County of San Francisco
SFPUC Wastewater Enterprise
Monthly Ocean Shoreline Bacteriological Report
November 2018

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Mon/05	Tue/13	Mon/19	Fri/23	Sat/24	Sun/25	Mon/26	Thu/29	30-day Geometric Mean[2]
15	384	776	< 10	**> 24196**	7701	86	847	6131	840
15EAST	95	20	10	345			31	231	60
16	20	20	134	1076			41	298	94
17	20	20	31				52		
18	20	20	< 10	1789	109		63	345	78
19	< 10	< 10	10	**> 24196**	169		41	959	107
21.1	10	< 10	20	2046	583		31	1178	98
20				8164	3448	96		379	
21				**19863**	9804	**12033**	842	1725	5086
22				**> 24196**	4352			816	

Sampling/Posting issues
None

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥ 400** MPN/100 mL[1]

Location	Mon/05	Tue/13	Mon/19	Fri/23	Sat/24	Sun/25	Mon/26	Thu/29	30-day Geometric Mean[2]
15	41	< 10	< 10	**1935**	**420**	< 10	20	228	59
15EAST	73	< 10	10	109			10	20	23
16	10	< 10	10	145			< 10	31	19
17	< 10	< 10	20				10		
18	10	10	< 10	**882**	20		41	< 10	26
19	< 10	< 10	< 10	**> 24196**	41		< 10	41	46
21.1	< 10	< 10	10	226	51		20	41	27
20				**4884**	**644**	10		10	
21				**2014**	**565**	**959**	169	171	501
22				**2142**	98			63	

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥ 104** MPN/100 mL[1]

Location	Mon/05	Tue/13	Mon/19	Fri/23	Sat/24	Sun/25	Mon/26	Thu/29	30-day Geometric Mean[2]
15	20	20	< 10	**3654**	**211**	20	20	41	52
15EAST	10	< 10	< 10	86			< 10	10	14
16	20	< 10	10	74			< 10	20	18
17	20	< 10	20				10		
18	10	< 10	< 10	**355**	20		< 10	20	20
19	< 10	< 10	< 10	**12997**	41		< 10	41	42
21.1	< 10	< 10	< 10	**121**	< 10		< 10	63	19
20				**2603**	**238**	< 10		63	
21				**496**	**109**	**122**	20	20	77
22				**4884**	30			52	

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)
Baker Beach	15, 15EAST, 16	11/21 0.95 11/27 0.09
China Beach	17	11/22 0.79 11/28 0.69
Ocean Beach	18, 19, 20, 21, 21.1	11/23 0.40 11/29 0.30
Ft. Funston	22	11/24 0.02

STATION POSTED due to elevated bacteria count
STATION POSTED due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)

[2]Geometric means calculated for 5 or more samples per 30-day period.

Reviewed by: R Duggan

City and County of San Francisco
SFPUC Wastewater Enterprise
Monthly Ocean Shoreline Bacteriological Report
December 2019

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Mon/02	Sat/07	Sun/08	Mon/09	Mon/16	Wed/18	Mon/23	Sun/29	Mon/30
15	934	**> 24196**	364	651	934	285	8164		9804
15EAST	41	4884	428	96	< 10	41	41		41
16	135	496	295	109	41	754	52		20
17	31	*	201	295	10		10		20
18	31	*	189	41	< 10		52		10
19	145	*	3076	880	41		10		30
21.1	10	*	63	63	52		31		72
20		*	31						
21		*	1789						
22		*	471					**> 24196 ****	173

Sampling/Posting issues
* Safety reasons - too dark to continue sampling
** Inaccessible for posting due to locked gate. Later determined no CSD occurred

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥ 400** MPN/100 mL[1]

Location	Mon/02	Sat/07	Sun/08	Mon/09	Mon/16	Wed/18	Mon/23	Sun/29	Mon/30
15	< 10	**11199**	10	10	< 10	20	74		31
15EAST	< 10	171	73	20	< 10	10	20		< 10
16	10	52	63	52	10	10	< 10		< 10
17	< 10	*	41	20	10		< 10		< 10
18	< 10	*	63	10	< 10		10		< 10
19	51	*	**598**	85	< 10		< 10		< 10
21.1	10	*	10	< 10	31		< 10		10
20		*	10						
21		*	359						
22		*	86					**1106 ****	10

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥ 104** MPN/100 mL[1]

Location	Mon/02	Sat/07	Sun/08	Mon/09	Mon/16	Wed/18	Mon/23	Sun/29	Mon/30
15	41	**11199**	52	10	10	20	41		30
15EAST	20	**171**	52	10	< 10	< 10	10		10
16	< 10	75	< 10	30	< 10	52	10		< 10
17	20	*	30	< 10	< 10		< 10		< 10
18	41	*	10	< 10	< 10		10		10
19	10	*	**345**	52	10		< 10		< 10
21.1	< 10	*	10	20	10		< 10		< 10
20		*	< 10						
21		*	74						
22		*	52					**4352 ****	20

Table 4. Beaches/Stations/Rainfall

Beaches	Stations
Baker Beach	15, 15EAST, 16
China Beach	17
Ocean Beach	18, 19, 20, 21, 21.1
Ft. Funston	22

Rainfall (in.)

12/01	0.08	12/10	0.17	12/18	1.15
12/02	0.12	12/11	0.34	12/19	0.01
12/04	0.24	12/12	0.13	12/22	0.52
12/06	0.42	12/13	0.03	12/24	0.02
12/07	1.13	12/14	0.02	12/25	0.30
12/08	0.18	12/17	0.02	12/29	0.69
12/09	0.01				

STATION POSTED due to elevated bacteria count
STATION POSTED due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)

Reviewed by: R Duggan

Appendix O-TL2

City and County of San Francisco
SFPUC Wastewater Enterprise
Monthly Ocean Shoreline Bacteriological Report
December 2018

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Mon/03	Mon/10	Tue/11	Mon/17	Tue/18	Wed/19	Mon/24	Mon/31	30-day Geometric Mean[2]
15	4106	7270		857	576		2603	860	1791
15EAST	41	63		379	63		86	10	61
16	144	109		1160	135	52	10	86	101
17	63	31		327			*	*	
18	31	20		121			10	20	27
19	63	< 10		345	72		10	20	38
21.1	52	30	< 10	110			< 10	41	30

Sampling/Posting issues
* No access to site due to locked gate Partial govt shutdown

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥ 400** MPN/100 mL[1]

Location	Mon/03	Mon/10	Tue/11	Mon/17	Tue/18	Wed/19	Mon/24	Mon/31	30-day Geometric Mean[2]
15	75	10		63	41		41	31	37
15EAST	< 10	20		52	10		10	< 10	15
16	< 10	< 10		156	20	20	< 10	< 10	18
17	10	20		30			*	*	
18	10	10		20			10	< 10	11
19	10	< 10		97	20		10	< 10	16
21.1	10	10	< 10	10			< 10	10	10

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥ 104** MPN/100 mL[1]

Location	Mon/03	Mon/10	Tue/11	Mon/17	Tue/18	Wed/19	Mon/24	Mon/31	30-day Geometric Mean[2]
15	31	52		**512**	84		63	< 10	59
15EAST	< 10	20		**155**	10		10	10	18
16	20	< 10		**364**	**148**	< 10	< 10	< 10	27
17	< 10	10		85			*	*	
18	10	< 10		41			< 10	< 10	13
19	< 10	< 10		**146**	< 10		< 10	10	16
21.1	< 10	**450**	10	30			< 10	< 10	23

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)			
Baker Beach	15, 15EAST, 16	12/01	0.12	12/16	0.73
China Beach	17	12/04	0.02	12/17	0.02
Ocean Beach	18, 19, 20, 21, 21.1	12/05	0.28	12/21	0.08
Ft. Funston	22	12/14	0.08	12/24	0.46

STATION POSTED due to elevated bacteria count
STATION POSTED due to Combined Sewer Discharge
* Station not accessible due to partial government shutdown

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)
[2]Geometric means calculated for 5 or more samples per 30-day period.
Reviewed by: R Duggan

City and County of San Francisco
SFPUC Wastewater Enterprise
Monthly Ocean Shoreline Bacteriological Report
May 2020

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Mon/04	Mon/11	Mon/18	Tue/26
15	4360	657	231	836
15EAST	10	10	20	41
16	< 10	< 10	41	10
17	10	< 10	20	< 10
18	< 10	< 10	31	< 10
19	< 10	< 10	< 10	< 10
21.1	< 10	< 10	10	146

Sampling/Posting issues
None

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥ 400** MPN/100 mL[1]

Location	Mon/04	Mon/11	Mon/18	Tue/26
15	52	< 10	10	63
15EAST	< 10	< 10	< 10	< 10
16	< 10	< 10	< 10	< 10
17	< 10	< 10	< 10	< 10
18	< 10	< 10	10	< 10
19	< 10	< 10	< 10	< 10
21.1	< 10	< 10	< 10	< 10

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Mon/04	Mon/11	Mon/18	Tue/26
15	20	< 10	< 10	31
15EAST	< 10	< 10	< 10	20
16	< 10	< 10	< 10	< 10
17	< 10	< 10	< 10	< 10
18	< 10	< 10	< 10	< 10
19	< 10	< 10	10	< 10
21.1	< 10	< 10	10	< 10

Table 4. Beaches/Stations/Rainfall

Beaches	Stations
Baker Beach	15, 15EAST, 16
China Beach	17
Ocean Beach	18, 19, 21.1

Rainfall (in.)			
05/02	0.01	05/18	0.13
05/11	0.02	05/30	0.01
05/12	0.09		
05/14	0.04		
05/17	0.18		

STATION POSTED due to elevated bacteria count
STATION POSTED due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)

Reviewed by: R Duggan

City and County of San Francisco
SFPUC Wastewater Enterprise
Monthly Ocean Shoreline Bacteriological Report
June 2020

Table 1. Total Coliform Bacteria (MPN) single sample criterion **≥10,000** MPN/100 mL[1]

Location	Mon/01	Mon/08	Mon/15	Mon/22	Mon/29
15	754	1815	1354	1951	75
15EAST	122	84	211	52	52
16	< 10	10	20	63	687
17	52	41	10	31	< 10
18	< 10	10	41	31	161
19	< 10	10	10	< 10	< 10
21.1	< 10	< 10	< 10	31	< 10

Sampling/Posting issues
None

Table 2. *E. coli* Bacteria (MPN) single sample criterion **≥ 400** MPN/100 mL[1]

Location	Day/Date	Day/Date	Day/Date	Day/Date	Day/Date
15	10	266	20	86	10
15EAST	< 10	< 10	< 10	10	10
16	< 10	< 10	< 10	31	134
17	< 10	10	< 10	< 10	< 10
18	< 10	< 10	< 10	20	20
19	< 10	< 10	< 10	< 10	< 10
21.1	< 10	< 10	< 10	10	< 10

Table 3. Enterococcus Bacteria (MPN) single sample criterion **≥104** MPN/100 mL[1]

Location	Day/Date	Day/Date	Day/Date	Day/Date	Day/Date
15	10	63	31	84	< 10
15EAST	10	10	41	< 10	< 10
16	< 10	< 10	< 10	< 10	52
17	< 10	< 10	< 10	< 10	10
18	< 10	< 10	< 10	< 10	10
19	30	< 10	< 10	< 10	< 10
21.1	< 10	< 10	< 10	< 10	< 10

Table 4. Beaches/Stations/Rainfall

Beaches	Stations	Rainfall (in.)
Baker Beach	15, 15EAST, 16	None
China Beach	17	
Ocean Beach	18, 19, 21.1	

STATION POSTED due to elevated bacteria count
STATION POSTED due to Combined Sewer Discharge

[1]A full description of posting criteria can be found at http://beaches.sfwater.org (click on Read More)

Reviewed by: R Duggan

EXHIBIT 13 -

submitted separately

EXHIBIT 14 -

submitted separately

Law Offices of
Thomas N. Lippe, APC

201 Mission Street
12th Floor
San Francisco, CA 94105

Telephone: 415-777-5604
Facsimile: 415-777-5606
Email: lippelaw@sonic.net

September 11, 2020

By Email: *EIR@ucsf.edu*
Ms Diane Wong
UCSF Real Estate - Campus Planning
654 Minnesota Street
San Francisco, CA 94143-0286

Re: Comprehensive Parnassus Heights Plan Draft Environmental Impact Report: Comments on Air Quality.

Dear Ms Wong:

This office represents San Franciscans for Balanced and Livable Communities (San Franciscans), a citizen's group composed of San Francisco residents. I write on its behalf to comment on the Draft Environmental Impact Report (DEIR) for the Comprehensive Parnassus Heights Plan (CPHP) with respect to its analysis of Project impacts on air quality.

San Franciscans objects to the approval of this Project. The DEIR fails to comply with the California Environmental Quality Act (CEQA) for the reasons described below and in my previous letters dated yesterday and today and submitted today.

1. The DEIR's Cancer Risk Impact Assessment Is Based on Legal Errors and Not Supported by Substantial Evidence.

a. The DEIR's thresholds of significance for cancer risk.

The DEIR establishes a threshold of significance for toxic air contaminant (TAC) related cancer risk as follows: "Exceed the LRDP EIR standard of significance by exposing receptors to toxic air contaminant emissions that (1) result in a cancer risk greater than 10 cancer cases per 1 million people exposed in a lifetime...." The DEIR also establishes more general threshold of significance, as follows: "Expose sensitive receptors to substantial pollutant concentrations." (DEIR 4.2-19 [pdf 233].)

The DEIR elaborates on the TAC-caused cancer risk as follows:

> In addition to criteria air pollutants, individual projects may emit TACs during construction and operation. As part of assessment of Initial Phase projects, a HRA [Health Risk Assessment] was conducted to provide quantitative estimates of health risks from exposures to TACs.

CEQA provides the lead agency with discretion in selecting significance

> thresholds for the purposes of assessing impacts. For the analysis of health risk and localized impacts, UCSF uses quantitative significance thresholds adopted by BAAQMD [Bay Area Air Quality Management District]. These thresholds are based on substantial evidence identified in Appendix D of the 2017 BAAQMD CEQA Guidelines and its 2009 Justification Report. These thresholds were applied for the analysis of health risk and localized impacts in the Final EIR for the 2014 UCSF Long Range Development Plan and are also applied in this document. Specifically, if a proposed project would result in increased cancer risks exceeding 10 in one million or, a hazard index exceeding 1.0 or a localized PM2.5 concentration exceeding 0.3 ìg/m3 then it would be considered to result in a significant impact with regard to exposure of sensitive receptors to substantial pollutant concentrations. The 0.3 ìg/m3 PM2.5 concentration and the excess cancer risk of 10.0 per million persons exposed are the levels below which BAAQMD considers new sources not to make a considerable contribution to cumulative health risks (BAAQMD, 2017a).
>
> As described by BAAQMD, USEPA considers a cancer risk of 100 per one million or less to be within the "acceptable" range of cancer risk. A cumulative cancer risk of 100 in one million is also used by the City of San Francisco for projects within its jurisdiction to determine the location of APEZ's. Therefore, a *cumulative increase* in cancer risk from all sources would occur if the total of all risks exceeds in one million [sic].

(DEIR 4.2-24 [pdf 238] (italics added).)

The last sentence of this passage appears to have a missing word. Presumably it is supposed to read "the total of all risks exceeds ***100*** in one million." It is also not clear what the DEIR means when it states that "a cumulative increase" in cancer risk would occur. Presumably it means that "cumulatively ***considerable*** increase in cancer risk from all sources would occur if the total of all risks exceeds ***100*** in one million."

For the Project's cumulative cancer risk impact, the DEIR confirms that it uses a threshold of 100 per one million, stating:

> As discussed above, cumulative health risks are analyzed in accordance with BAAQMD's threshold and guidance. As described by BAAQMD considers a cancer risk of 100 per one million or less to be within the "acceptable" range of cancer risk.

(DEIR 4.2-24 [pdf 238] (italics added).)

b. The DEIR's description of the existing conditions (i.e., baseline) for cancer risk.

The DEIR describes the existing conditions (i.e., baseline) for TAC related cancer risk from ambient concentrations of carcinogenic toxic air contaminants as 248.3 cases per million. (DEIR 4.2-10 [pdf 224].)

The DEIR describes the existing conditions (i.e., baseline) for TAC related cancer risk from diesel particulates (DPM) as 480 in one million in the year 2000 in the Bay Area; and 520 in one million in the year 2012 statewide. (DEIR 4.2-11 [pdf 225].) The DEIR indicates that in 2000, CARB approved a Diesel Risk Reduction Plan that it anticipated would result in an 80 percent decrease in statewide diesel health risk in 2020 as compared with the diesel risk in 2000. The DEIR does not disclose what the statewide diesel risk was in 2000, so it is not possible to calculate what an 80% reduction would look like in 2020. The DEIR also does not disclose what the statewide diesel risk is in 2020.

The EIR's description of the DPM baseline risk is insufficient because it is not current as of the date of the Notice of Preparation of the EIR.

c. The DEIR's impact assessment for cancer risk is based on legal error and not supported by substantial evidence.

(1) The DEIR's assessment of the Project's incremental increased cancer risk is based on legal error and not supported by substantial evidence.

The DEIR's impacts analysis concludes that the Project's incremental and cumulative increased cancer risk impacts are less than significant. These conclusions are based on errors of law and are not supported by substantial evidence.

The DEIR's threshold of significance for the Project's incremental cancer risk impact is any increase in cancer risk over 10 cases per million. The DEIR borrows this threshold from the BAAQMD CEQA Guidelines and then deploys it without regard for the extreme baseline cancer risk in San Francisco. The DEIR thereby commits the fundamental error of failing to add the Project's effects to the baseline for purposes of determining significance. (*San Joaquin Raptor/Wildlife Rescue Center v. County of Stanislaus* (1994) 27 Cal.App.4th 713, 722-723; *Friends of the Eel River v. Sonoma County Water Agency* (2003) 108 Cal.App.4th 859, 881-882.)

In addition to this fundamental legal error, the DEIR's use of this threshold regardless of baseline cancer risk is not supported by substantial evidence. The baseline cancer risk in San Francisco is 248.3 cases per million plus the unquantified DPM related risk. The DEIR's uncritical use of the 10 cases per million BAAQMD threshold implies that an increase of less than 10 cases per million is always less than significant, regardless of the baseline risk, which

presumably is very different in rural suburban parts of the Bay Area (e.g., Blackhawk) than it is in San Francisco. There is no substantial evidence to support this implicit factual finding.

There is no substantial evidence to support this implicit factual finding because the BAAQMD threshold is a policy, based on a value judgment, not a finding of fact based on evidence. This violates CEQA. Determinations of significance must be based on evidence, not value judgments and policy. (*Protect the Historic Amador Waterways v. Amador Water Agency* (2004) 116 Cal.App.4th 1099, 1108–1109 (*Amador Waterways*) ["such thresholds cannot be used to determine automatically whether a given effect will or will not be significant"].)

Here, other than pointing to the BAAQMD threshold, the DEIR fails to explain why the Project's admitted incremental increase in cancer risk is not significant given that it is being added to a severe baseline cancer risk. "[I]n preparing an EIR, the agency must consider and resolve every fair argument that can be made about the possible significant environmental effects of a project, irrespective of whether an established threshold of significance has been met with respect to any given effect." (*Amador Waterways, supra,* 116 Cal.App.4th at 1109.)

(2) The DEIR's assessment of the Project's cumulative increased cancer risk is based on legal error and not supported by substantial evidence.

As discussed above, for the Project's cumulative increased cancer risk, the DEIR uses threshold of any exceedance of 100 cases per one million because "BAAQMD considers a cancer risk of 100 cases per one million or less to be within the 'acceptable' range of cancer risk." (DEIR 4.2-24 [pdf 238],) The DEIR also confirms this on page 4.2-27, stating:

> As discussed above, cumulative health risks are analyzed in accordance with BAAQMD's threshold and guidance. As described by BAAQMD considers a cancer risk of 100 per one million or less to be within the "acceptable" range of cancer risk.

Assuming *arguendo* that this is an appropriate threshold for assessing whether the Project's cumulative cancer risk impact is significant, the DEIR fails to apply it. After stating this threshold on DEIR pages 4.2-24 and page 4.2-27, the DEIR shiftily alters the threshold on page 4.2-70, stating:

> Because the cumulative increase in cancer risk from all sources would be well below 100 in one million ... the CPHP's cumulative impact to local health risk and hazards would be reduced to less than significant with identified mitigation.

Thus, instead of considering any resulting cancer risk above 100 cases per one million to be significant, the DEIR shifts to requiring that the cumulative "increase" in cancer risk contributed by the Project in combination with other projects exceed 100 cases per one million to

be found significant. This shift reflects several legal errors.

First, the DEIR is just plain confusing as to what the cumulative threshold is, which frustrates meaningful public comment. Therefore, the DEIR must be revised and recirculated using a clear and stable cumulative threshold.

Second, the threshold as employed on page 4.2-70 (for both construction and operation) suffers the same legal defect as the incremental standard, i.e., it is employed without regard to the baseline cancer risk. The baseline cancer risk in San Francisco is 248.3 cases per million plus the unquantified DPM caused risk. According BAAQMD and this DEIR, this baseline risk is "unacceptable." The cumulative increase in cancer risk contributed by the Project in combination with other projects will make this existing severe condition worse. Other than pointing to the BAAQMD threshold, the DEIR fails to explain why the Project's admitted cumulative increase in cancer risk is not significant given that it is being added to a severe baseline cancer risk. (*Communities For a Better Environment v. California Resources Agency* (2002) 103 Cal.App.4th 98, 114 ["the guiding criterion on the subject of cumulative impact is whether any additional effect caused by the proposed project should be considered significant given the existing cumulative effect"]; *Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692, 718.)[1]

This legal error is illustrated by considering the math. According the DEIR, the threshold of a cumulative *increase* of 100 cases per million applies regardless of baseline risk. Thus, a project with a baseline cancer risk of 50 cases per million would need a post-project cancer risk of 150 cases per million for the cumulative impact to be deemed significant, while a project with a baseline cancer risk of 100 cases per million would need a post-project cancer risk of 200 cases per million for the cumulative impact to be deemed significant. Thus, a project with the higher baseline risk (100 per million) *would not be deemed* to have a significant cumulative impact with a post-project cancer risk of 150 cases per million, but a project with the lower baseline risk (50 per million) *would be deemed* to have a significant cumulative impact with a post-project cancer

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[1] The decision in *Kings County* repudiates the "ratio theory," stating:

> The [ ] EIR concludes the project's contributions to ozone levels in the area would be immeasurable and, therefore, insignificant because the [cogeneration] plant would emit relatively minor amounts of [ozone] precursors compared to the total volume of [ozone] precursors emitted in Kings County. The EIR's analysis uses the magnitude of the current ozone problem in the air basin in order to trivialize the project's impact ... The relevant question to be addressed in the EIR is not the relative amount of precursors emitted by the project when compared with preexisting emissions, but whether any additional amount of precursor emissions should be considered significant in light of the serious nature of the ozone problems in this air basin.

(*Kings County, supra*, 221 Cal.App.3d at 718).

risk of 150 cases per million.

In short, the widely repudiated "ratio theory" in which "the greater the overall problem, the less significance a project has in a cumulative impacts analysis" is embedded in the threshold of significance applied by the DEIR to the Project's cumulative cancer risk impact. (*Kings County, supra*, 221 Cal.App.3d 692, 721 ["We find the analysis used in the EIR and urged by GWF avoids analyzing the severity of the problem and allows the approval of projects which, when taken in isolation, appear insignificant, but when viewed together, appear startling. Under GWF's "ratio" theory, the greater the overall problem, the less significance a project has in a cumulative impacts analysis"].)

Needless to day, the environmental justice implications of the DEIR's use of this threshold are dire.

Third, like the incremental threshold, the cumulative threshold, represents a value judgement, not a threshold for making a factual findings based on evidence. And this is true for both the DEIR's initial formulation of the threshold as a post-project condition in which cancer risk exceeds 100 cases per one million, and its later formulation of the threshold as the cumulative increase in cancer risk contributed by the Project in combination with other projects exceeds 100 cases per one million.

CEQA neither requires nor allows the DEIR to use the BAAQMD's or EPA's judgment of "acceptable" cancer risk to determine the significance of the Project's impacts. UCSF's discretion to decide that significant environmental harm is "acceptable" in light of the project's benefits arises at the end of the CEQA analysis, in the context of a statement of overriding considerations, not at the beginning of the process, in determining whether impacts are significant.

> A statement of overriding considerations is required, and offers a proper basis for approving a project despite the existence of unmitigated environmental effects, only when the measures necessary to mitigate or avoid those effects have properly been found to be infeasible. (Pub. Resources Code, § 21081, subd. (b).) Given our conclusion the Trustees have abused their discretion in determining that CSUMB's remaining effects cannot feasibly be mitigated, that the Trustees' statement of overriding circumstances is invalid necessarily follows. CEQA does not authorize an agency to proceed with a project that will have significant, unmitigated effects on the environment, based simply on a weighing of those effects against the project's benefits, unless the measures necessary to mitigate those effects are truly infeasible. Such a rule, even were it not wholly inconsistent with the relevant statute (id., § 21081, subd. (b)), would tend to displace the fundamental obligation of "each public agency [to] mitigate or avoid the significant effects on the environment of projects that it carries out or approves

whenever it is feasible to do so" (id., § 21002.1, subd. (b)).

City of Marina v. Board of Trustees of the California State University (2006) 39 Cal.4th 341, 368-69.

This is a critical distinction, because where the Project does not exceed thresholds of significance that are erroneously inflated by the concept of "acceptable risk," UCSF is absolved of further legal obligation to mitigate the impact. As a result, the public cannot know whether UCSF will allow an unknown number of cancer cases to occur that it could have feasibly avoided had it scrupulously followed CEQA. Nor does the public know, had the EIR determined the Project's additional cancer risk is significant, whether or not UCSF would have found the Project's benefits outweigh its environmental and adverse human health effects.

Thank you for your attention to this matter.

Very Truly Yours,

Tom Lippe

Thomas N. Lippe

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Law Offices of
Thomas N. Lippe, APC

201 Mission Street
12th Floor
San Francisco, CA 94105

Telephone: 415-777-5604
Facsimile: 415-777-5606
Email: lippelaw@sonic.net

January 18, 2021 (re Air Quality)

By Email: regentsoffice@ucop.edu Office of the Secretary and Chief of Staff Board of Regents of the University of California 1111 Franklin St.,12th Floor Oakland, CA 94607	*By Email*: *EIR@ucsf.edu* Ms Diane Wong UCSF Real Estate - Campus Planning 654 Minnesota Street San Francisco, CA 94143-0286

Re: (1) **January 20, 2021, Finance and Capital Strategies Committee meeting, Agenda Item F5** (Amendment #7 to the UC San Francisco 2014 Long Range Development Plan for the Comprehensive Parnassus Heights Plan and Amendment #2 to the Physical Design Framework, San Francisco Campus);

(2) January 21, 2021, Board of Regents of the University of California meeting, Agenda Item entitled "Committee Reports Including Approvals of Recommendations from Committees: ... Finance and Capital Strategies Committee."

PROJECT IMPACTS ON AIR QUALITY

Dear Members of the Board of Regents of the University of California and Ms. Wong:

This office represents San Franciscans for Balanced and Livable Communities (San Franciscans), a citizen's group composed of San Francisco residents. I write on its behalf to object to the Board's approval of Amendment #7 to the UC San Francisco 2014 Long Range Development Plan for the Comprehensive Parnassus Heights Plan and Amendment #2 to the Physical Design Framework, San Francisco Campus (referred to herein as "Project").

The Board should not and cannot legally approve this Project because the Project Environmental Impact Report ("EIR") does not comply with the California Environmental Quality Act ("CEQA"). This letter discusses the EIR's failure to lawfully analyze and disclose the Project's impacts on air quality and human health.

As discussed in my September 11, 2020, letter regarding the Draft EIR's air quality analysis, to evaluate the significance of the Project's cancer risk effects, the EIR uses thresholds of significance developed by the Bay Area Air Quality Management District ("BAAQMD"). BAAQMD [Bay Area Air Quality Management District].

For the Project's incremental effects, BAAQMD's threshold is any increase in cancer risk at or above 10 new cases of cancer per one million people. For the Project's cumulative effects, BAAQMD's threshold is 100 cases of cancer per one million people.

My September 11, 2020, letter commented that the EIR is unclear as to how the cumulative threshold is applied. Is it deemed significant if the Project contributes to an increase in cancer risk where total post-project cancer risk exceeds 100 cases of cancer per one million. Or is it only deemed significant if the Project contributes an increase in cancer risk at least 100 in one million above baseline risk. The Final EIR and it response to comments fail to respond to this point or to clarify how the threshold was applied.

The Final EIR responds to my comment regarding the Draft EIR's failure to describe the baseline cancer risk from diesel particulates ("DPM) by calculating this risk using projections the California Air Resources Board ("CARB") made in the year 2000 regarding reductions in DPM caused cancer risk that could be expected by the year 2020. The response to comments provides, for the first time, an estimate the statewide diesel risk in 2000, which it uses to calculate a current basin wide cancer risk of 96 cases of cancer per 1 million people, stating:

> The California Air Resources Board (CARB) has published projected trends of DPM emissions for the San Francisco Bay Area Air Basin. Based on this latest trends document, basin-wide emissions of DPM are predicted to decrease from 10 tons per day in 2000 to 2 tons per day in 2020, an 80 percent reduction. As stated on page 4.2-11 of the Draft EIR, as of 2000, the average Bay Area cancer risk from exposure to DPM based on a population-weighted average ambient DPM concentration was approximately 480 in one million. Consequently, one may expect that the current (2020) basin-wide risk solely from DPM to be on the order of 96 in one million.

(FEIR Vol. 2, p. 8.4.2.2-240 (pdf 352).)

This response to comments is too little, too late. It is too little because it is an estimate based on 20 year old projections, not a current analysis at a time close to issuance of the Notice of Preparation. It is too late because an accurate and complete description of baseline conditions is essential information for a Draft EIR to present. The omission of this information from the Draft EIR requires recirculating a revised Draft EIR for public and agency comment.

The Draft EIR represents that baseline cancer risk from toxic air contaminants ("TAC") is 248 cases per one million people. As noted, the Final EIR suggests the DPM baseline cancer risk is 96 cases per 1 million. The Final EIR also states these two baseline risks are additive, stating: "Other toxic air contaminant emissions within the basin will further contribute to this estimated risk." (FEIR Vol. 2, p. 8.4.2.2-240 (pdf 352).) Thus, baseline cancer risk is at least either 248 cases per one million people or 344 cases per one million people. The Final EIR responds to my comment regarding the invalidity of the EIR's use of the cumulative threshold by referencing the fact that the BAAQMD considers any cancer risk below 100 cases of cancer in one million

people to be "acceptable" and cancer risk above 100 cases of cancer in one million people to be unacceptable. Thus, EIR must explain why any Project induced increase in cancer risk above this severe existing condition is not significant. (*Communities For a Better Environment v. California Resources Agency* (2002) 103 Cal.App.4th 98, 114 ["the guiding criterion on the subject of cumulative impact is whether any additional effect caused by the proposed project should be considered significant given the existing cumulative effect"]; *Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692, 718.)[1] The EIR fails to do so. This is a failure to proceed in the manner required by law.

My September 11, 2020, letter commented that the Draft EIR employs these thresholds in a manner that fails to account for the severity of existing baseline conditions. The FEIR's response to comments argues that these thresholds of significance are supported by "substantial evidence." (FEIR Vol. 2, p. 8.4.2.2-240-242 (pdf 352-354).) This is not responsive to my comment that the EIR commits a procedural/informational error by "failing to add the Project's effects to the baseline for purposes of determining significance."

The FEIR's response to comments argues that because BAAQMD, San Francisco and other agencies agree that these thresholds of significance are appropriate, this somehow provides "substantial evidence" supporting their use. (FEIR Vol. 2, p. 8.4.2.2-240-242 (pdf 352-354).) This and a number of other points purport to explain why the BAAQMD thresholds are supported by substantial evidence *in general*. The FEIR misconceives the task at hand, because the points made in the response to comments in this regard are entirely abstract, untethered to the fact of this Project. (See e.g., *Golden Door Properties, LLC v. County of San Diego* (2018) 27 Cal.App.5th 892, 903–905 (*Golden Door*) ["the Efficiency Metric 'allows the threshold to be applied evenly to most project types,' but it does not account for variations between different types of development; nor does it explain why the per person limit would be appropriately evenly

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[1] The decision in *Kings County* repudiates the "ratio theory," stating:

> The [ ] EIR concludes the project's contributions to ozone levels in the area would be immeasurable and, therefore, insignificant because the [cogeneration] plant would emit relatively minor amounts of [ozone] precursors compared to the total volume of [ozone] precursors emitted in Kings County. The EIR's analysis uses the magnitude of the current ozone problem in the air basin in order to trivialize the project's impact ... The relevant question to be addressed in the EIR is not the relative amount of precursors emitted by the project when compared with preexisting emissions, but whether any additional amount of precursor emissions should be considered significant in light of the serious nature of the ozone problems in this air basin.

(*Kings County, supra*, 221 Cal.App.3d at 718).

applied despite project differences. Without substantial evidence explaining why statewide GHG reduction levels would be properly used in this context, the County fails to comply with CEQA Guidelines"].)

The response to comments argues that the 100 in one million cancer risk threshold is based on guidance developed by the United States Environmental Protection Agency for "acceptable" risk. The announced basis of that threshold for toxic air pollutants is identified as the 1989 preamble to the benzene National Emissions Standards for Hazardous Air Pollutants (NESHAP) rulemaking, which is focused on providing the "maximum feasible protection against risks to health ..." (*Id.,* emphasis added.)

The EIR presents a simplistic misrepresentation of actual EPA policy. The EPA's actual policy is to assess increased cancer risk based on a host of site-specific factors within a range of values from 1 in one million to 100 in one million. This policy reflects the agency's attempt to balance the costs and benefits of protecting public health in its implementation of a host of federal environmental laws, including the Clean Air Act, Clean Water Act, Resource Conservation and Recovery Act, CERCLA (Superfund), etc. (See Exhibit [Starfield, L.E., "The 1990 National Contingency Plan: More Detail and More Structure, But Still a Balancing Act;" Environmental Law Reporter, June 1990].)[2]

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[2]"In the proposed NCP [Superfund National Contingency Plan], the Agency [EPA] had defined the acceptable risk range as being from 10^{-4} to 10^{-7}, meaning that when the excess risk to an individual of contracting cancer due to a lifetime exposure to a certain concentration of a carcinogen falls between approximately 1 in 10,000 [100 in one million] and 1 in 10 million, it is judged to be an acceptable exposure. As a measure of additional protection, the proposal provided that there should be a "point of departure" of 10^{-6}, toward the more protective end of the scale, that should be used in setting preliminary remediation goals; if conditions warranted, the final remedy could achieve a level elsewhere within the range. ¶ The final rule maintained the point of departure of 10^{-6}, but narrowed the risk range to 10^{-4} through 10^{-6}. This action was taken in response to public comment and concerns that the Superfund range went below the accepted de minimis level used by other EPA programs and those of other federal agencies. ... the Agency has retained the discretion to select a cleanup level outside the range in appropriate circumstances (e.g., where concerns about sensitive populations, synergistic effects among chemical mixtures, etc., suggest that the remedy should attain a level below 10^{-6}. The use of a range of acceptable risk is general practice for most government programs. As discussed below in the section on role of cost, it affords the Agency the flexibility to take into account different situations, different kinds of threats, and different kinds of technical remedies. If a single risk level had been adopted, (e.g., at the more stringent end of the risk range), fewer alternatives would be expected to pass the protectiveness threshold and qualify for consideration in the

Instead of following this analytic approach, the EIR selects one value at the least environmentally protective end of the EPA's "acceptable risk" range and uses it to determine the significance of the Project's impacts, but without regard to the Project's site-specific considerations.

The EIR's reliance on the 100 excess cancer threshold to determine cumulative significance is legally flawed because it improperly imports considerations of the cost and feasibility of mitigation into a determination of significance, whereas CEQA requires that these two determinations be made in distinct steps. The EPA standard was designed to support a different regulatory scheme, not to support determinations of significance under CEQA. The EPA is permitted and required to consider factors of cost and feasibility in its regulation of toxics under the Clean Air Act. However, CEQA neither requires nor allows the EIR to use EPA's judgment of "acceptable" cancer risk to determine the significance of cumulative impacts. The determination of "acceptable" environmental harm arises at the end of the CEQA analysis in the context of a statement of overriding considerations, not at the beginning of the process, in determining whether impacts are significant. (*See, e.g., City of Marina v. Board of Trustees of the California State University* (2006) 39 Cal.4th 341, 368-369.)

This is a critical distinction, because where the Project does not exceed thresholds of significance that are erroneously inflated by the concept of "acceptable risk," UCSF is absolved of further legal obligation to mitigate the impact. As a result, the public cannot know whether UCSF will allow an unknown number of cancer cases to occur that it could have feasibly avoided had it scrupulously followed CEQA. Nor does the public know, had the EIR determined that 46 additional child cancer cases per one million persons is significant, whether or not UCSF would have found the Project's benefits outweigh its environmental and adverse human health effects.

The Alliance also objected that the DSEIR's purported justification of the 100 excess cancer threshold as representative of "pristine" conditions was not coherent or explained by the DSEIR or the 2009 BAAQMD reports cited by the DSEIR.

The SEIR's use of the BAAQMD cancer risk thresholds is legally flawed because "a threshold of significance cannot be applied in a way that would foreclose the consideration of other substantial evidence tending to show the environmental effect to which the threshold relates might be significant." (*Protect the Historic Amador Waterways v. Amador Water Agency* (2004) 116 Cal.App.4th 1099, 1109.) Also, the EIR uncritically relies on an appeal to another agency's standards without justification, even though it is well-settled that mere compliance with

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balancing phase of the remedy selection process." (Id., 20 ELR 10237 [footnotes omitted].)

another agency's regulatory standards cannot be used under CEQA as a sufficient basis for determining that a project's effects are insignificant. (*Ebbetts Pass Forest Watch v. California Department of Forestry & Fire Protection* (2008) 43 Cal4th 936, 957 (err to conclude that compliance with pesticide restrictions precludes significant impact); *Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692, 712-718 (improper to conclude that compliance with air quality regulations precludes significant impact); *Oro Fino Gold Mining Corporation v County of El Dorado* (1990) 225 Cal.App.3d 872, 881-882 (meeting general plan noise standard does not preclude significant impact).) An agency must conduct its own fact-based analysis of project impacts, regardless of compliance with other regulatory standards. (*Californians for Alternatives to Toxics v. Department of Food & Agriculture* (2005) 136 Cal.App.4th 1, 16; C*itizens for Non-Toxic Pest Control v. Department of Food & Agriculture* (1986) 187 Cal.App.3d 1575, 1587-1588.)

The response to comments also purports to find substantial evidence support for using these thresholds in the fact that BAAQMD developed its 100 in one million cumulative criterion because it is reflective of air quality in a 'pristine' portion of the Bay area. It is difficult to see how this supports the EIR's use of the cumulative threshold to find this Project's cumulative cancer risk impacts to be less than significant.

If the EIR uses the cumulative threshold to conclude that if the Project contributes to an increase in cancer risk where total post-project cancer risk exceeds 100 cases of cancer per one million, then the fact that cancer risk in pristine areas is 100 in one million supports finding this Project's cumulative contribution to be "considerable" because it will increase cancer risk above the baseline cancer risk of at least 248 or cases per one million people or 344 cases per one million people

Alternatively, if the EIR uses the cumulative threshold to deem the impact significant only if the Project contributes an increase in cancer risk at least 100 in one million above baseline risk, then the fact that cancer risk in pristine areas is 100 in one million is irrelevant to the determination of significance.

The response to comments also refers several times to a 1000 foot distance from sources of cancer risk. The response does not explain how this distance supports the EIR's application of these thresholds to the facts of this Project and its setting. If this distance limit is used to exclude the contribution of regionally or globally transported TACs to this Project's cumulative excess cancer risk, the EIR commits an error of law. Baseline risk cannot be arbitrarily reduced by this artifice. Also, the fact that DPM or TACs from a <u>particular</u> source may attenuate with distance does not explain why the cumulative background DPM and TACs from <u>all</u> sources, including more distant sources, should be ignored in a cumulative analysis. CEQA requires consideration of all related sources of risk in cumulative analysis.

Finally, BAAQMD adopted these cancer risk thresholds of significance for general use and the EIR uses them without adapting them or how they are applied to reflect anything unique about this project or its environmental setting. CEQA requires that before the Regents use such generalized thresholds of significance, it must adopt the thresholds by a public rule-making process, and must show in that process that the thresholds are supported by substantial evidence.

> Having determined the Efficiency Metric is a threshold of significance, we conclude the 2016 Guidance Document "must be adopted by ordinance, resolution, rule, or regulation, [be] developed through a public review process[,] and be supported by substantial evidence." (§ 15064.7, subd. (b).) The County's reliance on *Save Cuyama, supra*, 213 Cal.App.4th 1059, 153 Cal.Rptr.3d 534 to argue CEQA compliance is unnecessary because the threshold of significance is evaluated on a case-by-case basis does not persuade us otherwise. *Save Cuyama* acknowledges a threshold for general use is subject to CEQA public adoption guidelines. (Id. at p. 1068, 153 Cal.Rptr.3d 534.) ... The County acknowledges the Efficiency Metric was not formally adopted by ordinance, rule, resolution, or regulation and was not developed through a public review process. Accordingly, the 2016 Guidance Document is out of compliance with state CEQA requirements.

Golden Door Properties, LLC v. County of San Diego (2018) 27 Cal.App.5th 892, 903.

Thank you for your attention to this matter.

Very Truly Yours,

Thomas N. Lippe

Exhibits

1. Starfield, L.E., "The 1990 National Contingency Plan: More Detail and More Structure, But Still a Balancing Act;" Environmental Law Reporter, June 1990.

EXHIBIT 1

Appendix O-TL2

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The 1990 National Contingency Plan — More Detail And More Structure, But Still a Balancing Act

Lawrence E. Starfield

Editors' Summary: The 1986 Superfund Amendments required EPA to make substantial changes in the national contingency plan, EPA's principal rulemaking under the Superfund program. Congress imposed potentially conflicting mandates on EPA, such as requirements to maximize treatment and to ensure cost-effective remedies. EPA's proposed NCP revisions, issued in December 1988, were analyzed in ELR's March 1989 issue by the EPA attorney who played a principal role in drafting the proposed revisions. In this Article, the final NCP revisions, which took effect on April 9, 1990, are analyzed by the EPA attorney primarily responsible for the legal issues in the final rule. The rule and preamble, which together cover 200 pages in the Federal Register*, include EPA's response to the 1986 amendments and revisions that reflect EPA's experience with the first decade of Superfund. The author provides an overview of the framework of the final NCP, analyzes the major issues addressed by the final rule, and discusses the prinicipal changes from the 1988 proposed rule. The author observes that the true test of the NCP's success will be in the field, and that Congress should give the new regulatory framework some time to be implemented before imposing another set of mandates and deadlines.*

Mr. Starfield is an attorney-adviser in the U.S. Environmental Protection Agency's Office of General Counsel. He has worked on Superfund issues at EPA since 1987, and in the private sector from 1981-87. He is the attorney principally responsible for legal issues in the National Contingency Plan's 1990 revisions, which are the subject of this Article. The views expressed are those of the author and do not necessarily represent the views of the U.S. Environmental Protection Agency.

List of Acronyms

The following abbreviations are used in this Article:

ACLs—alternate concentration limits

ARARs—applicable or relevant and appropriate requirements

BDAT—best demonstrated available technology

CERCLA—Comprehensive Environmental Response, Compensation, and Liability Act of 1980

CRP—community relations plan

EPA—Environmental Protection Agency

ESD—explanation of significant difference

FS—feasibility study

HRS—hazard ranking system

HSWA—Hazard and Solid Waste Amendments of 1984

LDR—land disposal restrictions

MCL—maximum contaminant level

MCLG—maximum contaminant level goal

NCP—national priorities list

O&M—operation and maintenance

PA—preliminary assessment

PRPs—potentially responsible parties

RCRA—Resource Conservation and Recovery Act

RD/RA—remedial design/remedial action

RI—remedial investigation

RI/FS—remedial investigation/feasibility study

ROD—record of decision

SARA—Superfund Amendments and Reauthorization Act of 1986

SDWA—Safe Drinking Water Act

SI—site investigation

SMOA—Superfund memorandum of agreement

TAG—technical assistance grant

TBC—to be considered

WQC—water quality criteria

[20 ELR 10225]

DATELINE: Washington, D.C. February 2, 1990. EPA Administrator William K. Reilly today signed the long-awaited rule to put into place a revised structure for the operation of EPA's Superfund program for cleaning up hazardous waste sites.

While this is not the type of sensational headline to grab the attention of the average reader, it is big news to those who are potentially responsible for, who regulate, or who live near Superfund sites.[1] The lack of a catchy headline is due in part to the fact that although the rule has been long-awaited (and court-ordered), its general content has been known or surmised for some time. The 1990 national contingency plan (NCP)[2] implements requirements in the Superfund Amendments and Reauthorization Act of 1986 (SARA),[3] and thus many aspects of the rule were pre-ordained. Further, the final rule is not dramatically different from the 1988 proposed NCP, which the Environmental Protection Agency (EPA) has been using as guidance since its publication.[4] Thus, to a large degree, the process for achieving Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA)[5] remedies under the final rule should not be very different from the process that has been followed for the last year or two.

At the same time, the rule contains many highly significant changes and formalizes what were only proposed positions on how EPA will run the Superfund program. The onerous length of the NCP (the rule and preamble covered 978 double-spaced pages prior to its condensed 200 pages in the *Federal Register*) is due to the need to cover the many issues raised by SARA, plus EPA's desire to revise the program to reflect the experience of the first decade of

Superfund.[6]

The most notable changes from the 1988 proposal include the following: a more flexible standard against which private cleanup actions will be measured for determing "consistency with the NCP" for cost recovery purposes; a commitment for CERCLA cleanups to generally attain maximum contaminant level goals (MCLGs), where the MCLGs are above zero; a more limited risk range for cleanups involving carcinogenic constituents; and a presumption that variances under the Resource Conservation and Recovery Act (RCRA)[7] are appropriate for the treatment, prior to land disposal, of soils at CERCLA sites that are contaminated with restricted hazardouswastes.

The final rule also takes steps to provide greater structure to the CERCLA process, and thereby to promote consistency of process and result in remedy selection. This is accomplished through an organization of the nine remedy selection criteria into three functional categories, statements concerning the types of remedies that are "expected" to result from the process, and the placement of increased emphasis on protecting health and the environment through the use of treatment at sites. Significant revisions have also been made in the process of defining how CERCLA actions are to comply with the applicable or relevant and appropriate requirements (ARARs) of other laws, in the opportunities afforded for public participation (e.g., longer public comment periods, community interviews, and an administrative record process), and in the increased role of states as partners to EPA throughout the response action process.

However, *despite increases in detail and structure, the revised NCP remains a highly discretionary document, under which decisionmakers have the flexibility to balance relevant factors and to design remedies to meet the unique needs of specific sites.* Accordingly, many of the changes in the final rule may go further toward achieving "consistency in process" rather than "consistency in result."

This Article discusses the major changes from the 1988 proposed NCP and other significant issues in the final rule. However, to provide a clear context for the revisions, the Article first provides background on Superfund and the NCP, a summary of the major sections of the NCP, and a "road map" through the hazardous site response section of the NCP.

Background

Superfund

In 1980, Congress enacted CERCLA to provide authority for the cleanup of serious threats to public health and the environment resulting from releases of hazardous substances, pollutants, and contaminants into the environment.[8] CERCLA § 104[9] empowers EPA[10] to take response **[20 ELR 10226]** measures "consistent with the national contingency plan" to address such threats through direct funding under the Superfund (the Fund). EPA also has the authority, independent of Fund-financed response actions, to issue orders or seek judicial relief under CERCLA § 106[11] to require the abatement of releases that may be an imminent and substantial endangerment to public health, welfare, or the environment.

EPA response actions may consist of either "removal" or "remedial" actions.[12] Removal actions are generally immediate or interim measures taken to assess, evaluate, minimize, or mitigate danger to the public health or the environment.[13] In addition to including the actual removal of hazardous substance wastes, a removal action may consist of providing a temporary alternative water supply, building a fence, or conducting an investigation under § 104(b) (including a remedial investigation (RI)[14]). A remedial action is an action consistent with a long-term or "permanent" remedy at a site, such as the excavation or destruction of hazardous substances, or provision of a permanent alternative water supply.[15] The decision as to whether an action is a removal or a remedial action is not always obvious, because the definitions overlap to a significant degree. Removal and remedial actions must, "to the greatest extent possible, be in accordance with the provisions of the [NCP]."[16]

Where EPA determines that a state, political subdivision thereof, or Indian tribe has the capability to carry out a removal or remedial action under CERCLA § 104 (in accordance with the NCP) and adequate enforcement authority (under state/tribal law), the Agency may enter into a cooperative agreement or contract with the state, subdivision; or tribe to carry out specified actions at CERCLA sites.[17] The governmental entity with primary responsibility for carrying out the response action at a site is termed the "lead agency."[18]

The statute imposes liability for the costs of response actions on four classes of "responsible parties" described in

CERCLA § 107[19] — past owners and operators of the release site, present site owners/operators, certain generators of the released hazardous substances, and transporters of the hazardous substances. Pursuant to § 107(a)(4)(A),[20] the United States, states, and Indian tribes may recover all costs of removal or remedial action incurred in a manner "not inconsistent with the [NCP]." Similarly, "other necessary costs of response incurred by any other person consistent with the [NCP]" may be recovered from the four categories of liable parties.[21] The courts have generally found that liability under CERCLA is joint and several (if harm is indivisible).[22]

In addition to this basic structure, Congress added a substantial number of requirements and directions in SARA. For instance, new CERCLA § 121 sets out requirements for how remedial actions should be selected; a new § 117 provides specific opportunities for public participation in remedy selection; and subsections (h), (j), and (k) of Section 113 have been added concerning the timing and scope of judicial review and the requirement for an administrative record for all response actions.

The NCP

As noted above, many of CERCLA's requirements are tied to "compliance" or "consistency" with the NCP. The NCP has been the blueprint for governmental response actions since 1968, when it focused almost exclusively on responses to oil spills. With the enactment of CERCLA in 1980, Congress prescribed a greatly expanded role for the NCP, extending its applicability to releases of hazardous substances, pollutants, and contaminants.[23] The NCP has been revised several times, with the last major revision occurring in November 1985.[24]

With the passage of SARA in October 1986, EPA set about drafting revisions to the NCP.SARA § 105(b)[25] specifically required EPA to revise the NCP "to reflect the requirements" of SARA, and specifically to provide procedures and standards for remedial actions "which are consistent with the [SARA amendments] relating to the selection of remedial actions." The following are the major SARA requirements relating to remedy selection that the NCP was intended to incorporate:

* protect human health and the environment;[26]

* comply with ARARs under federal environmental or state environmental or facility siting laws (or justify a waiver);[27]

* select *cost-effective* remedies;[28]

[20 ELR 10227]

* utilize *permanent* solutions and alternative treatment technologies or resource recovery technologies *to the maximum extent practicable;*[29]

* address the preference for remedies in which *treatment* that tht *permanently* and significantly reduces the volume, toxicity, or mobility of hazardous substances, pollutants, and contaminants is a principal element;

* consider the short- and long-term potential for adverse human health effects from exposure in assessing the effectiveness of alternative remedial actions;[30]

* provide significant opportunities for *public participation;*[31] and

* provide for substantial and meaningful *state involvement* in the initiation and development of remedial actions.[32]

These diverse statutory requirements provided a complicated mandate for the Superfund program, due in large part to the inherent tension among some of the SARA requirements. EPA was directed to maximize treatment, yet ensure cost-effective remedies.[33] The Agency was also directed to take into account the preferences of both states and the public before selecting remedies, yet those preferences could lead to a departure from other statutory requirements (e.g., some communities might oppose an incineration alternative due to concerns over air emissions). In short, SARA pushed the Agency in several directions at one time, resulting in some difficulty in prescribing hard rules that should apply at all sites. As discussed in more detail below, EPA attempted to implement the multiple directions in the statute by incorporating a set of nine remedy selection criteria into the final NCP, which are to be applied on a site-specific basis.

The Agency's efforts to achieve consensus on how best to reconcile SARA directives were a major cause of the delay in the promulgation of the rule. In addition, the Agency took the opportunity provided by SARA to completely revise the 1985 NCP, and thus initiated many more changes than may have been contemplated by Congress when it set the statutory deadlines. In effect, the 1985 NCP is largely overhauled (especially the subparts dealing with hazardous substance response). Also, many provisions were added to reflect programmatic experience gained over the 10 years Superfund has been in operation, and other changes were made to clarify the response process and to make the NCP easier to follow. For instance, the sequence in which response activities is discussed was changed to better reflect the order in which they occur. Also, public participation requirements were integrated throughout the rule to be discussed with the activity to which they relate.

Due to these factors, the promulgation of the NCP was repeatedly delayed, and the statutory deadline[34] to promulgate a revised NCP by April 17, 1988, was not met. In the autumn of 1988, several environmental groups sued the Agency for failure to meet the statutory deadline, resulting in a timetable for final promulgation, enforceable by the U.S. District Court for the District of Columbia.[35] The revisions were proposed in the *Federal Register* on December 21, 1988,[36] and as agreed, the final revisions were delivered to the *Federal Register* on February 5, 1990, for publication. They appear in the March 8, 1990 issue of the *Federal Register.*[37]

Effective Date/Retroactivity

The 1990 revisions took effect on April 9, 1990. The rule will not be applied to actions completed before the effective date, but it will be applied to on-going actions.[38]

Ninety-Day Study of CERCLA

Several months after the proposal of the NCP in the *Federal Register,* EPA Administrator Reilly took office and began a 90-day review of the Superfund program.[39] This study was designed as an internal agency review, with a focus on the management of the Superfund program and implementation issues; it was not a review of the NCP or of the then-pending NCP rulemaking proposal. Although the two initiatives proceeded on separate tracks, they are generally consistent and do overlap (e.g., both emphasize treatment, public participation, and expedited response).

Overall Framework of the Final NCP

The 10 Subparts

The NCP is broken down into 10 subparts (and an 11th will be proposed). The following four subparts were substantially revised or added by the final rule and are critical to an understanding of the Superfund response process:

Subpart E (subpart F in the 1985 NCP), entitled "Hazardous Substance Response," is the key subpart of the NCP for Superfund responses. It sets out the elements for response to hazardous substance releases and describes the CERCLA process from site discovery through final cleanup. It is within this section that the procedure for remedy selection is discussed.[40]

Subpart F is a new subpart added to explain the role and responsibilities of states in CERCLA actions. CERCLA § 121(f)(1), added by SARA, directed EPA to promulgate regulations to provide for substantial and meaningful state involvement during response actions.[41]

Subpart H is a new subpart on participation by other persons in response actions and on the recovery of costs **[20 ELR 10228]** under CERCLA § 107(a)(4)(B). It consolidates and expands into a separate subpart the discussion of private party actions under CERCLA.[42]

Subpart I is a new subpart, added to implement the requirement in SARA (CERCLA § 113(k)) for the establishment of an administrative record.[43]

The remaining subparts relate either to oil discharges (which are generally exempt from response under CERCLA by statute[44]) or to administrative interactions among cooperating federal agencies; they are not discussed in detail in this article:

Subpart A is a general introductory section, although it also includes important definitions.[45]

Subpart B combines, without major change, Subparts B and C from the 1985 NCP and describes the interaction of executive branch agencies in responding to releases of hazardous substances or oil.[46]

Subpart C addresses preparedness activities, federal and regional contingency plans, and planning responsibilities of state and local agencies.[47]

Subpart D sets forth the phases of response to discharges of oil, and is substantially unchanged from the 1985 NCP; however, the subpart may take on increasing importance in light of the recent oil spills in Alaska and elsewhere.[48]

Subpart G designates,and sets out the responsibilities of, federal trustees who may act on behalf of the President to assess and restore damaged natural resources.[49]

Subpart J discusses the use of dispersants for oil spills; it is largely unchanged from Subpart K in the 1985 NCP.[50]

Subpart K has been reserved for a new subpart of regulations concerning federal facilities. EPA intends to propose, as an amendment to the NCP, a subpart that would act as a road map to the NCP requirements that apply to CERCLA response actions at federal facilities and would codify certain provisions of CERCLA § 120 that relate to federal facilities only.

Road Map to the CERCLA Site Response Process (Subpart E)

Site Discovery. The process begins with the discovery of a release by one of several possible mechanisms (e.g., notification requirements under CERCLA § 103(a) or (b) or under other laws, a petition from a citizen,[51] etc.)[52] In the case of an emergency (e.g., fire, explosion), a removal action will be taken to stabilize the site.

Removal Assessment. In nonemergency situations, the release is evaluated to determine if a removal action is appropriate based on a removal preliminary assessment (PA) and, if appropriate, a removal site inspection (SI).[53]

Removal Action. Where necessary to protect human health and the environment, the Agency may initiate a removal action to prevent, mitigate, or minimize the threat posed by the release. This may involve removal of surface drums, fencing of the site, the provision of temporary drinking water supplies, etc.[54] Removals may be emergency actions (taken within hours of discovery), time-critical actions, or non-time-critical actions.[55]

Remedial Site Evaluation. A remedial PA (and SI, where appropriate) is conducted on all sites in the CERCLA Information System database, CERCLIS, to see if the site is a priority for long-term remedial response.[56] These evaluations involve the collection of data for scoring the site under the hazard ranking system (HRS) model;[57] sites scoring above the threshold in the HRS[58] are placed on the national priorities list (NPL)[59] for further evaluation and possible remedial action.[60]

Remedial Priorities. The Agency evaluates releases for inclusion on the NPL based on the HRS score or one of the other methods for listing outlined in the NCP.[61] The Agency may spend Fund monies for *remedial* action only at those sites that are on the NPL. ("Fund-financed remedial action" does not include removal action or enforcement action.[62])

Remedial Investigation/Feasibilty Study. The Agency will undertake a remedial investigation and feasibility study (RI/FS) at sites that are, or appear to be, priorities for action (i.e., that are on, or are proposed for listing on, the NPL). The RI/FS, like any other investigation conducted pursuant to CERCLA § 104(b), is a removal action under CERCLA § 101(23), despite the word remedial in its name.

During the RI, the nature and extent of the threat posed by the contamination is studied; concurrently, alternative **[20 ELR 10229]** approaches are developed as part of the FS for responding to and managing the site problem.[63]

Preliminary Remediation Goal. The first step in developing alternatives during the FS is the establishment of a preliminary goal for the remediation of the site.[64] This goal is initially based on readily available information, such as a chemical-specific ARAR, or the "point of departure" in the range of acceptable risk.[65] Alternatives are then developed that are capable of attaining the preliminary remediation goal. (The goal may be modified as additional information is

developed).

Screening of Remedial Alternatives. A broad list of alternatives is then reviewed and screened, with the more extreme, impracticable options being eliminated before the detailed analysis of alternatives begins. Alternatives may be eliminated during screening based on effectiveness, implementability, or "grossly excessive" cost.[66]

Analysis of Alternatives Using the Nine Criteria. The Agency then conducts a detailed analysis of the remaining alternatives (usually three-nine, depending on the complexity of the problem). The advantages and disadvantages of the alternatives are studied and compared using the following nine remedy selection criteria:[67]

* overall protection of human health and the environment;

* compliance with (or waiver of) the ARARs of other laws;

* long-term effectiveness and permanence;

* reduction of toxicity, mobility, or volume through treatment;

* short-term effectiveness;

* implementability;

* cost;

* state acceptance; and

* community acceptance.

Selection of Remedy.[68] Thenine criteria are then used to select the remedy by evaluating them in three functional categories (threshold, balancing, and modifying criteria), in order to reflect the nature and/or timing of their application. The first two criteria — protectiveness and compliance with ARARs — are identified as threshold criteria; only the alternatives that meet those criteria may be carried forward.[69]

Protective, ARAR-compliant alternatives are then "balanced" (i.e., used to evaluate tradeoffs) based on the middle five criteria (and the two modifying criteria, to the extent they are known). The Agency then attempts to select *the* remedial alternative that "utilizes permanent solutions and treatment . . . to the maximum extent practicable" and is "cost-effective" based on a comparison of the appropriate balancing or modifying criteria.[70] Alternatives are judged cost-effective if their costs are "in proportion" to their overall effectiveness; an alternative is found to achieve the maximum permanence and treatment practicable based on a balancing of the seven nonthreshold criteria, with an emphasis on the factors of "long-term effectiveness and permanence" and "reduction in mobility, toxicity or volume through treatment."[71]

EPA and the state then discuss the remedial options and issue a proposed plan, which sets out the lead agency's recommended alternative.[72] Consistent with CERCLA § 117, the public is afforded an opportunity to review and comment on the alternatives studied in the FS and the proposed plan.[73] After review of and response to public comments, and formal consideration of the two modifying criteria (state and community acceptance), the final remedy selection is documented in a record of decision (ROD).[74]

Remedial Design/Remedial Action and Operation and Maintenance. The lead agency then sets about designing, constructing, and implementing the selected remedy.[75] Often, the remedial action plan set out in the ROD will need to be modified in light of information developed during the design phase (e.g., the Agency may learn that more soil is contaminated and needs to excavated). If the remedial action to be taken differs "significantly" from the remedy selected in the ROD with respect to scope, performance, or cost, the lead agency will issue an explanation of significant differences (ESD).[76] If the action to be taken "fundamentally alters" the basic features of the remedy selected in the ROD, the lead agency will propose and take comment on a ROD amendment.[77]

Once the remedy is operational and functional (or later, for groundwater restoration remedies[78]), the state undertakes

responsibility for funding and carrying out operation and maintenance (O&M) of the remedy.[79]

Deletion From the NPL, Five-Year Review. Once EPA has determined that no further response action is appropriate, the site may be proposed for deletion, or recategorized on the NPL,[80] even where O&M is continuing. Sites at which hazardous substances remain above levels that allow for unlimited use and unrestricted exposure must be reviewed at least every five years after the initiation of the remedy (not merely after completion), consistent with CERCLA § 121(c).[81] As discussed in more detail below, the NCP discusses EPA's general policy not to delete a site at which hazardous substances remain until at least one five-year review has been performed after completion of the remedial action.

[20 ELR 10230]

Major Issues/Changes in the 1990 NCP

ARARs Issues

There were several major changes and statements in the final NCP revisions relating to ARARs, the "applicable" or "relevant and appropriate" requirements of other environmental laws. How CERCLA actions comply with ARARs often determines the cleanup standard at a site or certain parameters that the remedial approach must fulfill. Thus, a discussion of major ARARs issues is an important starting point in a review of the final NCP.

* *Background.* As defined in the final rule, "applicable" requirements are cleanup standards, standards of control, and other substantive environmental protection requirements, criteria, or limitations promulgated under federal environmental or state environmental or facility siting laws that specifically address a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance found at a CERCLA site.[82]

A "relevant and appropriate" requirement is a *promulgated* standard that, while not applicable to the substance, location, or action, addresses problems or situations sufficiently similar to those encountered at a CERCLA site that its use is well suited to the particular site. One example is where a federal requirement has not been adopted by a state authorized to run the federal program. Such requirement may not be applicable in the state, but it could nevertheless be relevant and appropriate to management of the CERCLA waste at issue. In another example, RCRA waste management requirements may be relevant and appropriate to a CERCLA waste that is similar to a RCRA-listed hazardous waste but is not specifically listed in the RCRA regulations[83] (and thus to which RCRA would not independently "apply").

The concept of requiring remedies to attain relevant and appropriate standards (i.e., standards that do not independently apply as a matter of law) is unique to CERCLA and has generated controversy and confusion. (Indeed, it is somewhat counter-intuitive to be required to comply with requirements that do not apply as a matter of law.) To add some consistency to the process, the final rule offers several factors to consider in determining if a requirement is relevant and appropriate under the circumstances of the release (both findings must be made).[84] However, the notion of what standards are appropriate is, almost by definition, a matter of judgment, subject to case-by-case variations. Thus, the Agency retains considerable discretion in making the ultimate decision of what standards a CERCLA remedy should attain based on potential relevance and appropriateness. (Of course, the decision that a remedy must attain a certain standard may be questioned during the comment period of the ROD.) This discretion is even broader in that the Agency may decide that only certain portions of a requirement are relevant and appropriate.[85] The ability to find that a nonapplicable requirement is not appropriate has limited the instances in which statutory waivers[86] are necessary for relevant and appropriate requirements.

There are four conditions that must be met for a requirement to be considered a potential ARAR, based either on applicability or relevance and appropriateness. First, the requirement must be promulgated (i.e., "of general applicability and enforceable").[87] Second, it must be a substantive — rather than administrative — requirement; CERCLA actions are required to meet only the procedures set out in the NCP (additional procedures of other laws are met where appropriate, as a matter of policy).[88] Third, it must be a requirement of an "environmental" law, as provided in CERCLA § 121(d)(2)(A)(i) and (ii);[89] the requirements and procedures of nonenvironmental laws are simply complied with to the extent they apply — they are not considered as part of the ARARs review process under CERCLA.[90] Fourth, ARARs are limited to on-site actions, consistent with CERCLA § 121(d)(2)(A);[91] where EPA

sends wastes off site, that waste transfer must comply with the substantive and administrative requirements of *applicable* law (there would be no relevant and appropriate determination, and no waiver option).[92]

Only those requirements that pertain to a specific action are ARARs for that action.[93] The clearest case for the application of this principle is where contaminated soil is being removed from the surface at a site as part of a removal action or a first operable unit ROD; groundwater cleanup standards for the contaminants found in the soil would not pertain to the surface cleanup action, and thus would not be ARARs for that action.

ARARs may be chemical-specific (e.g., an established level for a specific chemical in groundwater), action-specific (e.g., a land disposal restriction for RCRA hazardous wastes), or location-specific (e.g., a restriction on actions that adversely affect wetlands). Thus, the concept is much broader than that of a specific cleanup level for a site.

The idea of applying the ARARs of other *federal* laws to CERCLA actions was first introduced by the 1985 **[20 ELR 10231]** NCP.[94] SARA generally incorporated the idea into CERCLA § 121(d)(2) for remedial actions, and added the requirement to meet certain ARARs of *state* law, which the final rule picks up.[95] Although not required by SARA, the final NCP also continues the 1985 policy of requiring removal actions to comply with ARARs "to the extent practicable."[96]

* *Maximum Contaminant Levels and Maximum Contaminant Level Goals as ARARs.* In the preamble to the proposed NCP, the Agency had stated that the ARAR for the cleanup of groundwater that was an actual or potential source of drinking water would generally be the maximum contaminant level (MCL).[97] This approach was based largely on the view that MCLs, as the enforceable drinking water standards under the Safe Drinking Water Act (SDWA), are relevant and appropriate to the cleanup of CERCLA sites.[98] The option of generally requiring cleanup to health-based maximum contaminant level goals (MCLGs) was rejected, based on a determination that MCLs are protective of human health, and that it would not be appropriate to require groundwater at CERCLA sites to be cleaner than the levels required for the nation's water supply. Further, MCLGs are, by definition, unenforceable, aspirational goals under the SDWA.[99] According to the proposal, MCLGs would have been attained only in unusual cases (e.g., cases involving multiple contaminants or pathways where the attainment of enforceable MCLs would result in a risk greater than the acceptable risk range).[100]

A number of commenters criticized this approach, focusing on the direction in the statute to attain MCLGs "where relevant and appropriate." These commenters argued that EPA should attain even zero-level MCLGs because MCLGs are health-based standards — not standards based on what is feasible for drinking water systems (the case for MCLs) — and thus are the appropriate standard for CERCLA cleanups. They suggested that where such levels could not be physically attained, waivers should be used.

Although EPA continues to believe that the language in the statute gives the Agency considerable discretion to decide whether it is "appropriate" to apply standards more stringent than drinking water standards to groundwater, the Agency reevaluated the MCL/MCLG question during the comment review period and sought to give greater deference to the words of the statute while not requiring attainment of standards that would be generically inappropriate.

The preamble to the final rule notes, as a threshold matter, that in addition to giving the Agency discretion as to when compliance with MCLGs might be appropriate, the first sentence in CERCLA § 121(d)(2) sets out a somewhat competing mandate: It requires on-site CERCLA remedies to attain promulgated standards or levels of control established under the SDWA (i.e., MCLs), where they are applicable or relevant and appropriate.[101]

The final NCP deals with the potential applicability of both MCLs and MCLGs by providing that MCLGs that are greater than zero shall be attained where "relevant and appropriate under the circumstance of the release." (Thus, it is expected that MCLG's above zero will generally be the cleanup level for actual and potential drinking water sources.) However, where the MCLG is set at zero (as it is for carcinogens), the relevant MCL would be used as the cleanup standard, where relevant and appropriate.[102]

This revised approach is believed to better reflect the statutory intent of CERCLA § 121, while also recognizing the practical difficulties inherent in attaining MCLGs set at zero (indeed, the Agency concluded that it is not scientifically possible to detect whether a level of zero contamination has been attained). The NCP explains that the use of an unattainable, unmeasurably zero level is not appropriate in setting actual cleanup levels to be attained under

Superfund.[103] Further, CERCLA requires protective remedies, not the complete elimination of risk.[103]

The approach adopted in the final rule also recognizes the realities of present groundwater treatment technology. While some commenters may believe that zero levels are attainable, or that EPA should require cleanup down to the levels of detection, the empirical evidence suggests that such results are far from practical. Experience with the Superfund program has shown that groundwater treatment is very difficult.[104] While groundwater remediation is proving effective in containing plumes to prevent further migration and in achieving significant mass reduction of chemicals, it may not be possible in many cases to achieve MCLs throughout the aquifers, not to mention levels of zero.

The practical impact of the change from "generally MCLs" to "generally non-zero MCLGs" is small at present, because for noncarcinogens (the body of chemicals with MCLGs above zero), the MCLs are set at the same level as the corresponding MCLGs. However, in the future, the Agency may consider setting MCLGs that are more stringent than MCLs for certain noncarcinogens. Although such an action would have no legal effect on compliance under the SDWA, it would have a potential impact on CERCLA remedies; in effect, groundwater at some **[20 ELR 10232]** CERCLA sites may be driven to be cleaner than U.S. drinking water. Of course, where a more stringent MCLG level cannot be achieved, site-specific waivers would likely be used at CERCLA sites.

It is important to note that the preamble to the final rule strongly emphasizes the importance of MCLs/nonzero MCLGs as the primary standards for the cleanup of groundwater at CERCLA sites. Alternate concentration limits (ACLs)[105] are discussed as being appropriate only where it is not practicable to meet the MCL/nonzero MCLG;[106] similarly, water quality criteria (WQC)[107] are discussed as being generally appropriate only in limited cases involving surface water.[108]

* *Freezing ARARs.* A frequent ARARs issue is whether a requirement that is made part of a selected remedy (or that drives the choice of that remedy) must be revised when a new requirement is promulgated. In the preamble to the proposed NCP, EPA took the position that requirements promulgated after the initiation of the remedial action will not be attained unless necessary to ensure protectiveness.[109] This was intended to avoid the requirement to restart work already begun.

In the final rule, the Agency reconsidered and expanded this interpretation by providing that requirements promulgated or modified after the signing of the ROD — an earlier point in the process — must be attained (or waived) only when determined to be applicable or relevant and appropriate *and* necessary to ensure protectiveness.[110] That is to say, ARARs generally freeze at the time of ROD signature.

The Agency explained that this approach is both necessary and appropriate under the statute. A contrary requirement, to reexamine potential ARARs throughout the design and implementation phases of CERCLA remedies, would threaten to subject remedial actions to constant interruption and reevaluation, significantly disrupting the cleanup process. This would be inconsistent with Congress' intent that EPA conduct cleanups expeditiously[111] and would prevent the Agency from achieving finality in the remedy selection process.

This ARARs freezing policy will not compromise protection of human health and the environment. EPA will continue to review CERCLA remedies where hazardous substances are left on site at least every five years to ensure that the remedy remains protective.[112] Further, the Agency will evaluate standards promulgated after ROD signature, as appropriate, to ensure that the selected remedy is adequately protective.

The determination of whether a remedy remains protective is a complicated issue, and guidance is expected on the matter in the near future. However, it is likely that a five-year review of protectiveness would, at a minimum, include an assessment of whether the measures put in place by the ROD continue to provide effective management, within acceptable risk levels, of the hazardous substances remaining on site. Obviously, if monitoring wells showed new contamination, additional measures might be necessary. The more difficult issue during the five-year review — or earlier, if appropriate — will be whether the protectiveness of a remedy is called into question by the promulgation of a new standard since the time of ROD signature.

For example, a substance that had been considered nonhazardous at the time of remedy selection might subsequently be listed as a hazardous waste under RCRA. If the ROD had allowed that substance to be left in place without treatment or engineering controls, the newly applicable RCRA requirements might well result in a finding that the remedy is no longer protective and that additional response action (preceded by a ROD amendment or ESD) is

required. By contrast, if the newly regulated substance had been contained using engineering controls along with other hazardous substances, the additional information concerning the substance's RCRA status might not result in a finding that the remedy is no longer protective. (Such a finding might need to reflect a reexamination of the risk assessment for the site in conjunction with the new information; if the risk posed by the site continued to be within acceptable levels, no modification of the remedy would be necessary.)

As for new remedial decisions made after ROD signature, the freezing ARARs policy applies as follows: Components of a remedy not described in the ROD must attain (or waive) requirements that are identified as applicable or relevant and appropriate *at the time* the ROD amendment or explanation of significant differences (ESD) describing the component is signed.[113]

* *Definition of Placement: Application of RCRA Land Disposal Restrictions.* One of the most controversial ARARs issues is the debate over how RCRA applies to CERCLA actions; the preambles to both the proposed and final NCP spend a significant amount of time on the question.[114] Perhaps the most contentious issue within that debate is how to apply the land disposal restrictions (LDR) that were added to RCRA § 3004[115] by the Hazardous and Solid Waste Amendments of 1984 (HSWA).[116]

[20 ELR 10233]

According to RCRA § 3004(k), "land disposal" is defined for the purposes of § 3004 and LDR as including the "placement" of a specified hazardous waste in a landfill, surface impoundment, waste pile, etc.[117] Thus, where a specified waste has been "placed" in a hazardous waste management unit, land disposal has occurred and the LDR requirements are triggered. The LDR requirements ban the disposal of most hazardous wastes after a given point in time, unless EPA promulgates treatment standards for those wastes. The Agency has promulgated (or plans to promulgate) regulations for all categories of LDR wastes,[118] and it has in general required treatment using the best demonstrated available technology (BDAT) prior to lawful land disposal. Although Congress appears to have contemplated that LDR standards would apply to wastes from CERCLA cleanups (even if not immediately),[119] many in the Agency and in the regulated community have found the standards difficult to implement in the context of CERCLA cleanup actions.

A number of parties have argued that BDAT standards were designed for specific chemicals or waste streams, and that such standards are poorly suited to CERCLA cleanup actions that typically involve complex mixtures of chemicals. Further, contamination at CERCLA sites generally involves contaminated soils that are difficult and costly to treat (especially by incineration, a common BDAT technology). Indeed, many inside and outside the Agency suggest that applying the LDR requirement to CERCLA cleanups has the perverse effect of encouraging no treatment at sites because it results in a choice of extremes: either treat the material to expensive BDAT levels (which in the case of combustion technologies results in large volumes of ash remaining for disposal) or leave the material in place, thereby avoiding LDR. Interim options, such as treating the contaminated soil to safe levels that are above BDAT and then placing it back in the unit of origin, would seem to be unavailable. The preamble to the proposed rule set out EPA's interpretation that LDR-restricted waste may not be placed in a unit without treatment to BDAT, even if the waste has been partially treated and is being re-placed in the unit.[120]

In response to the numerous comments on this point, the Agency issued a supplemental notice in October 1989, requesting comment on a possible reinterpretation of RCRA § 3004(k) to the effect that if soil were excavated, treated, and "re-placed" in the unit of origin, that unit would be improved and no new "placement" of waste would be said to have occurred (and the LDR requirements would not be triggered).[121]

The preamble to the final NCP retains the 1988 interpretation that placing waste back into the unit of origin constitutes "placement" for the purposes of RCRA § 3004 (and specifically, LDR), unless the waste was treated to BDAT (or to an approved variance level).[122] However, the preamble discussion recognizes the practical problem posed by the applicability of BDAT to contaminated soil at cleanup sites and sets out a series of actions to address this issue.

First, the Agency pledges to promulgate specific BDAT standards that would be appropriate for contaminated soil and debris (the existing BDAT standards are generally developed with defined waste streams in mind). Second, to give more immediate relief, the preamble sets out the Agency's view that the BDAT standards established for certain wastestreams are generally inappropriate for contaminated soil and debris, and thus decisionmakers can "presume" that a RCRA

treatability variance is available for such materials.[123] Because on-site CERCLA actions are not subject to permitting or administrative determination requirements of other laws,[124] a variance level may be set at CERCLA sites by the regional administrator as part of the ROD process. However, the variance level will still need to be justified in the ROD, and the presumption that a variance is appropriate may be rebutted on a site-specific basis, such as where the soil is saturated with high levels of combustible organic chemicals (as discussed in the preamble to the final rule).[125]

Finally, EPA is not taking final action at this time on the supplemental proposal to reinterpret "placement."[126]

* *Point of Compliance With ARARs in Groundwater.* In discussing ARARs, it is critical to define the physical point at which protective levels must be achieved. This is especially problematic in groundwater where no fixed contaminant boundaries exist. For instance, should compliance be required at the vertical line extending from the site owner's property boundary, at the existing boundary of the contamination itself, or at all points of contamination? In the preamble to the proposed rule, EPA stated that its general policy will be to clean up contaminated groundwater (that is being used, or is reasonably likely to be used, as drinking water) throughout the contaminated plume, or where waste is left in place on the surface, up to and beyond the edge of the waste unit boundary.[127]

The preamble to the final rule reaffirms this general policy of achieving an area of attainment but also discusses the possibility of setting alternative points of compliance in certain limited cases.[128] First, where a plume of groundwater contamination is caused by releases from several distinct sources that are in close geographical proximity, the preamble contemplates that the problem may appropriately **[20 ELR 10234]** be addressed as a whole rather than source by source. Thus, the point of compliance could be drawn to encompass the proximate sources, and the contaminated plume stemming from these sources could be pulled back to that line. This option is based on an assessment that it would be impracticable to, in effect, divide a contaminant plume such that it could be drawn back to sources at several different but nearby points. Drawing the plume back to the line surrounding those sources would make more practical sense, without a loss in protection.

Second, the preamble notes that where there is little likelihood of exposure due to the remoteness of the site, it may also be appropriate to consider an alternate point of compliance, provided that contamination in the aquifer is controlled from further migration.[129] The Agency did not give guidance on when a site is sufficiently "remote" to justify such an alternate point of compliance, but the limitation in the preamble to remote areas where there is little chance of exposure suggests that this possibility will be rarely used.

Any use of an alternate point of compliance would need to be justified on a case-by-case basis, considering the statutory requirements for remedies to be protective and to prefer treatment technologies, and the general goal of the statute to clean up — rather than to maintain the status quo — at contaminated sites.[130]

* *TBCs* (criteria or guidance "to be considered"). The issue of whether government policy statements or guidance documents are ARARs has frequently arisen at CERCLA sites. To address this point, the Agency developed the concept of "TBCs," nonbinding criteria, guidance, advisories, and the like that — unlike ARARs — are not required to be attained. TBCs may, however, contain information that may be helpful in the establishment of a cleanup standard.

The proposed rule suggested that TBCs, as well as ARARs, *must* be identified in the early stages of remedy selection.[131] A number of commenters were concerned that the rule, as proposed, would require the time-consuming identification of an undefined array of advisories and policy statements. In response, the final rule makes clear that the use and identification of TBCs are discretionary, not mandatory.[132]

The significance of this change is that the identification and use of TBCs are not routinely required during the remedial development process. At the same time, the Agency may still use TBCs to assist in determining what is protective or to otherwise help in designing Superfund remedies, where appropriate, as a complement to ARARs. For instance, where there is no binding requirement as to the safe level of a contaminant, but a health advisory or guidance document exists on the point, the Agency may refer to that document to support its decision on a cleanup standard. Such a decision would have to be justified on a site-specific basis, and the public (and potentially responsible parties (PRPs)) would have an opportunity during the comment period to comment on the appropriateness of using the levels in that TBC.

* *Substantive, Not Administrative, Requirements.* The Agency has consistently interpreted the concept of ARARs as including only the substantive, not administrative, requirements of other laws.[133] The preamble to the final rule

continues this interpretation and includes the concept in the definitions of "applicable" and "relevant and appropriate" requirements.[134] This interpretation was historically based on the position that CERCLA actions must be allowed to proceed expeditiously and that compliance with administrative and procedural provisions would slow down CERCLA actions.[135] Moreover, the NCP sets out a detailed set of procedures of its own that CERCLA actions must follow; these render unnecessary the procedures of other environmental programs.

In enacting SARA, Congress codified elements of this policy. CERCLA § 121(e)(1) expressly relieves EPA of any permitting requirement for on-site CERCLA actions. In addition, Congress crafted a new § 121(d)(2), which requires CERCLA actions to attain the "standards" and "levels of control" set by other environmental laws. This section too supports the position that CERCLA actions need not follow the procedures of other laws. The substantive/administrative distinction is also consistent with the Agency's view that the provisions of other environmental laws were impliedly repealed or preempted by CERCLA for on-site CERCLA actions.[136]

Although administrative provisions, such as those calling for consultation with other agencies or the reporting of certain information, are not required, it is EPA policy to generally engage in such consultation and provide needed information (e.g., discharge monitoring reports).[137]

[20 ELR 10235]

* *Compliance With ARARs During Response Actions.* The final rule requires CERCLA remedies to comply with ARARs *during* the design and implementation of the remedial action, as well as at its conclusion.[138] This point was the subject of significant comment, as several noted that the statute merely requires CERCLA remedies to attain ARARs "at the completion of the remedial action."[139] However, as the preamble to the final rule explains, compliance with ARARs during the remedial action makes sense for many of the same reasons that compliance with ARARs makes sense at completion: The requirements of other laws help define how the activity can be carried out in a manner that is protective of health and the environment.[140] For instance, if the conduct of a remedy involves the storage of hazardous waste pending construction of a final treatment unit, it would be short-sighted at best and irresponsible at worst to be concerned with applicable waste management standards only at the end of the project. Waste managed during the remedial action should also meet the substantive standards of other applicable or relevant and appropriate laws.

Similarly, EPA is continuing its policy of attaining ARARs *during* removal actions[141] (to the extent practicable, as discussed below in the section on Removal ARARs). This policy would apply to fieldwork conducted as part of an RI/FS, which comes within the definition of a removal action.[142] EPA has issued extensive guidance on how it will comply with the ARARs of the resource protection statutes — such as the Endangered Species Act[143] and the National Historic Preservation Act[144] — during the investigative and cleanup phases of CERCLA response.[145]

The policy of attaining ARARs during remedial and removal actions does not apply to chemical-specific ARARs, such as soil cleanup levels, which can only be met at the completion of the action.[146] In addition, a statutory waiver is available for interim actions that will attain the ARAR upon completion of the total response.[147]

* *Removal Actions — Compliance With ARARs.* Most of the foregoing discussion has focused on compliance with ARARs for CERCLA *remedial* actions; the rules for short-term actions, "removals," are different based on both the statute and long-standing practice. The 1985 NCP provided that because of their time-sensitive nature, removals need meet ARARs only to the "greatest extent practicable, considering the exigencies of the situation."[148] In SARA, the ARARs concept was applied only to remedial actions.[149] To some, the omission represented an implied finding that removals need not meet the requirements of other laws (although it could also be argued that the language of SARA impliedly affirmed the existing requirement that removals should meet ARARs to the extent practicable).

In the final rule, the Agency decided that it was sound policy for removal actions to attain ARARs "to the extent practicable," while at the same time recognizing that ARARs should not interfere with the mission of removals to quickly respond to and stabilize dangerous sites.[150] The preamble to the final rule explains in greater detail how and when removal actions should meet the requirements of other laws and still fulfill their statutory mission.[151]

First, the preamble makes clear that only requirements that pertain to the specific response actions being conducted are potential ARARs. For instance, if a removal action consisted of removing leaking drums, requirements relating to potential groundwater cleanup would not be ARAR for that removal action.

Second, once requirements are said to be potential ARARs for a removal, they must be complied with "to the extent practicable considering the exigencies of the situation."[152] The preamble attempts to give greater precision to this phrase. The notion of practicability is based on two factors: the urgency of the situation and the scope of the removal action.[153] The urgency factor is rather obvious — where the time-sensitive nature of the removal is such that compliance with (or even identification of) all potential ARARs is not possible, those requirements need not be met. This will often be the case where the Agency responds to fires, explosions, or serious spills.

The "scope of the removal action" factor is more complex. It reflects the narrow purpose of removals to mitigate or minimize harm, rather than to accomplish a permanent remedy. For example, where contaminated soil is discovered near a school yard, a removal action may be taken to fence off the contaminated area, remove the top two feet of contaminated soil, and cover the area with clean topsoil. This action would address the immediate problem of preventing exposure of the school children to the contamination. However, the removal would not attempt to address all contaminated soil on site (i.e., the contamination below two feet), and thus might arguably not meet a soil cleanup level for that contaminant.

One option for addressing this problem might have been to require the removal action to continue excavation until the soil cleanup ARAR was met. However, such an approach, if applied broadly, could substantially increase the cost and time required to perform the removal action, thereby exceeding the action's intended scope.[154] In effect, **[20 ELR 10236]** a policy of requiring removals to attain ultimate cleanup standards would convert removals into remedial actions, without the additional procedures required in the NCP.[155] It would also limit the number of removals that can be performed and would greatly reduce the ability of removals to respond quickly to site problems. To date, removals have been one part of the Superfund program that has been an unqualified success, due in large part to the ability of the program to function quickly.

An alternative approach, adopted by the Agency, is to recognize that a final cleanup standard would not be practicable to meet, given the limited scope and duration of a removal. Of course, the permanent remedy of attaining soil cleanup standards may be met by subsequent *remedial* actions carried out at the site.

The preamble also notes that the six statutory waivers[156] available for CERCLA remedial actions may also be used to waive ARARs during removals.[157]

* *State ARARs Issues.* The SARA amendments added the requirement that CERCLA remedial actions must comply with applicable or relevant and appropriate requirements of state environmental and facility siting laws (as well as federal environmental laws) where those requirements are promulgated, identified in a timely manner, and more stringent than those under federal law.[158] The final NCP extends this concept of attaining more stringent state ARARs to removal actions as a policy matter. (EPA has further stated, as a matter of policy, that promulgated Indian tribal requirements may be potential ARARs.[159])

From the beginning, there have been problems in the identification of ARARs from the support agency (most often, the states). Some states have provided mere "laundry lists" of state laws and/or regulations, without specific discussion of how, if at all, they relate to the site. This has resulted in delays and wasted resources. To avoid this problem in the future, the preamble to the final NCP directs states to provide "a list of requirements with specific citations to the section of law identified as a potential ARAR, and *a brief explanation of why that requirement is considered to be applicable or relevant and appropriate to the site."*[160] In addition, the final rule requires the identification of state ARARs no later than the detailed analysis stage of the FS.[161] These new requirements may force agencies to make key decisions on cleanup standards earlier in the process.

One of the most difficult state ARARs issues is the determination of whether legislated goals (e.g., nondegradation standards under state law) constitute substantive requirements such that they should be considered ARARs. State laws setting general goals may be considered substantive ARARs if they are promulgated and enforceable, and "directive in intent," either on their face or through regulations.[162] For example, if a state statute prohibits the degradation of surface water below a defined level, it is directive in nature and may be an ARAR. If a state law sets forth an anti-degradation goal without regulations or direction as to how to achieve it, the Agency must decide whether the goal constitutes an ARAR (e.g., is it enforceable), and then may exercise flexibility in determining how to comply with the goal. In any case, even if a remedial response is found not to comply with a state anti-degradation ARAR during the response, an interim action waiver of the state standard may be appropriate if the ARAR will be satisfied upon completion of the

total remedy for the site.[163]

Risk Assessment and Risk Range

The NCP contemplates the use of risk assessments as an integral part of the process for developing remedial alternatives that are protective of human health and the environment.

Risk analysis begins during the early stages of the RI, when a "baseline risk assessment" is performed to evaluate the risk posed by a site in the absence of any remedial action.[164] It is based on a comparison with this no-action risk level that the lead agency will target levels of risk that will be adequately protective of human health for a particular site. The baseline risk assessment also helps to provide justification for performing remedial action at the site.

Concurrently, the lead agency would begin to set a "preliminary remediation goal" as part of the FS. The preliminary remediation goal is an initial statement of the desired endpoint concentration or risk level, and alternatives are developed that are capable of meeting that goal.[166] It is based on readily available information, such as chemical-specific ARARs (e.g., a drinking water standard), concentrations associated with the reference doses or cancer potency factors, or the point of departure for the Agency's acceptable risk range, discussed below.[167] The preliminary remediation goal is modified during the site evaluation process as site-specific data (including information from the baseline risk assessment or newly identified ARARs) become available.[168]

[20 ELR 10237]

Where there is only one contaminant of concern and a chemical-specific ARAR (e.g., a drinking water standard) exists for that contaminant, the remediation goal will be set at the ARAR level, and achievement of that standard will generally be deemed to be protective.[169] However, an ARAR may not be available for the contaminant of concern (or for all of several contaminants at a site), or compliance with available ARARs may not be sufficiently protective due to additive or synergistic effects from multiple pathways of exposure or multiple contaminants.[170] Thus, risk assessments will often be necessary to determine the appropriate cleanup goal. (Compliance with the available ARARs would, of course, still be required, consistent with NCP § 300.430(f)(1)(i)(A).)

Where ARARs are not available or are not sufficiently protective, EPA sets remediation goals for noncarcinogens such that the cumulative risks from exposure will not result in adverse effects to human populations (including sensitive subgroups such as children) during a lifetime or part of a lifetime, incorporating an adequate margin of safety.[171] The risks associated with potential alternatives are assessed based on the "reasonable maximum exposure scenario," which is designed to include all exposures that can be *reasonably* expected to occur.[172] The analysis considers exposures under both current use conditions as well as potential future conditions,[173] but does not focus on worst-case exposure assumptions.[174]

Where environmental effects are observed, EPAsets remediation goals based on environmental ARARs (where they exist) and levels based on a site-specific assessment of what is protective of the environment. For carcinogens, the establishment of an acceptable level of risk in cases where ARARs do not exist (or are not sufficiently protective) is especially sensitive, because such contaminants arguably pose a risk at almost any level of exposure (although that risk may be large or small depending on the amount and duration of the exposure and the type of carcinogen involved). Under the NCP, when remedies cannot entirely eliminate potential exposure to a carcinogen, the Agency may achieve protection of human health by selecting remedies that pose very small risks, (i.e., that are within an acceptable range of risk) based on a review of reliable cancer potency information such as EPA's cancer potency factors.[175]

In the proposed NCP, the Agency had defined the acceptable risk range as being from 10<-4> to 10<-7>, meaning that when the excess risk to an individual of contracting cancer due to a lifetime exposure to a certain concentration of a carcinogen falls between approximately 1 in 10,000 and 1 in 10 million, it is judged to be an acceptable exposure.[176] As a measure of additional protection, the proposal provided that there should be a "point of departure" of 10<-6>, toward the more protective end of the scale, that should be used in setting preliminary remediation goals; if conditions warranted, the final remedy could achieve a level elsewhere within the range.[177]

The final rule maintained the point of departure of 10<-6>, but narrowed the risk range to 10<-4> through 10<-6>.[178] This action was taken in response to public comment and concerns that the Superfund range went below the accepted

de minimis level used by other EPA programs and those of other federal agencies. It also reflects the limits of available analytical techniques, which cannot effectively verify for many contaminants that concentration levels corresponding to a risk of 10<-7> have actually been attained.[179]

Although this change might appear to be a lessening of protection or a lessening of the Agency's commitment to protect, it is in fact likely to have minimal if any impact on the selection of remedies at Superfund sites for two reasons. First, no CERCLA remedies have selected 10<-7> as a cleanup level to date (although one or two may have achieved it due to the efficacy of the technology). Second, the Agency has retained the discretion to select a cleanup level outside the range in appropriate circumstances (e.g., where concerns about sensitive populations, synergistic effects among chemical mixtures, etc., suggest that the remedy should attain a level below 10<-6>).

The use of a *range* of acceptable risk is general practice for most government programs.[180] As discussed below in the section on role of cost, it affords the Agency the flexibility to take into account different situations, different kinds of threats, and different kinds of technical remedies. If a single risk level had been adopted, (e.g., at the more stringent end of the risk range), fewer alternatives would be expected to pass the protectiveness threshold and qualify for consideration in the balancing phase of the remedy selection process.

Remedy Selection — Added Structure

One of the major changes between the proposed and final NCP is the attempt in the final rule to build greater structure into the remedy selection process. The Superfund program has been criticized for having a process that was too vague and incapable of quality control or review; rather, remedies were said to be selected by an arbitrary assessment of any of the nine remedy selection criteria. The process was equated with juggling nine balls and picking one out of the air.

By making a number of structural modifications in the remedy selection process, EPA seeks to accomplish two goals: first, to increase consistency in both process and result during remedy selection, and second, to improve **[20 ELR 10238]** understanding of the process on the part of the public and PRPs.

* *Categorizing the Nine Criteria During Final Remedy Selection.* The first initiative was to group the nine criteria into three functional categories and to place those categories in the text of the rule.[181]

First, the rule establishes a category of two "threshold" criteria that all remedial alternatives must meet to be considered in the final balancing: (1) "overall protection of human health and the environment" and (2) "compliance with applicable or relevant and appropriate requirements of other environmental laws (unless a waiver is justified)." These requirements cannot be compromised.

Next, the rule establishes a category of five "balancing criteria" that are used to weigh the tradeoffs among the protective, ARAR-compliant[182] remedial alternatives:

* long-term effectiveness and permanence;

* reduction of toxicity, mobility, or volume through treatment;

* short-term effectiveness (e.g., environmental impacts during the cleanup itself);

* implementability (e.g., whether the technology being considered is available within the necessary timeframe); and

* cost.

Finally, two "modifying criteria" — state acceptance and community acceptance — are considered in altering otherwise viable approaches. These criteria are listed for consideration at the end of the process because they are generally not fully known until after the public comment period on the proposed plan; however, they may be considered part of the balancing process as soon as they are known.

These categories of criteria were discussed in the preamble to the proposed NCP, but they were intended to be used during the detailed analysis stage.[183] The final rule moves the criteria into the text of the rule itself and makes them applicable to the remedy selection decision itself, thereby assuring that the final decision gives the appropriate

consideration to each factor.

Although the nine criteria do afford the Agency considerable flexibility, the remedy selection process is not as wide open as it may seem. In practice, most alternatives will not show dramatic differences in all nine criteria (remember that all must be protective and ARAR-compliant to get into the balancing stage). Tradeoffs on a site-specific basis are likely to focus on one or two criteria. For instance, where alternatives are similar in cost, the balancing will focus on differences in effectiveness or implementability; where two alternatives both accomplish treatment, the key factor may be cost or short-term effects. It is highly unlikely that all of the balancing and modifying factors will be at issue in the comparison of two alternatives.

Further, during the final balancing stage, when the Agency selects the alternative that "utilizes permanent solutions and treatment to the maximum extent practicable," the final rule places special emphasis on the factors of "long-term effectiveness and permanance" and "reduction in mobility, toxicity, or volume through treatment;"[184] these two criteria will be decisive when the alternatives perform similarly with respect to other balancing criteria.[185] Thus, where Alternative A is protective at a lower cost than Alternative B, but Alternative B would result in a greater reduction in the mobility of the waste, the rule would assign added "points" to the treatment alternative. Where alternatives provide similar long-term effectiveness and permanence and a similar reduction in mobility, toxicity, or volume, the other balancing criteria will serve to distinguish among the alternatives. This prioritizing of criteria adds some greater predictability to the process.

Thus, although the nine criteria have been retained, the discretion in evaluating them has been somewhat limited by structural changes in the final rule. Those changes should also help the decisionmakers — and the reviewing public — to better understand the process of selecting a remedy from among unequal options.

* *Emphasis on Treatment.* Another major change in the remedy selection process under the 1990 NCP is the increased emphasis on treatment in CERCLA remedies. EPA sets this tone at the outset by establishing a new program goal that EPA shall select remedies that are protective over time and "minimize untreated waste."[186] The rule then goes on to set out the "expectation" that the Agency will "use treatment to address the principal threats posed by a site, wherever practicable."[187] Treatment may represent the sole remedy, or it may be part of a combination of responses, as where "hot spot" areas are treated and immobile wastes and treatment residues are controlled using engineering controls. The preamble further establishes, as a guideline, that treatment as part of CERCLA remedies should generally achieve reductions of 90 to 99 percent in the concentration or mobility of contaminants of concern.[188]

Also, as noted above, the final rule emphasizes treatment during final remedy selection by requiring that the factors of long-term effectiveness and permanence and reduction in mobility, toxicity, or volume through treatment be emphasized in the final balancing process to determine which alternative offers the maximum permanence and treatment practicable.[189]

Another way in which the final rule has been revised to encourage the selection of more treatment remedies is through the addition of an expectation that innovative treatment technology alternatives should be developed where such technologies offer the potential for "comparable" performance;[190] an innovative technology need not be shown to be superior to more proven technologies to be chosen as part of a remedy.

These factors, taken together, suggest that more treatment **[20 ELR 10239]** remedies will be selected under the 1990 NCP than was the case previously.

* *"Expectations" in the Final Rule.* A third important change in the structure of the remedy selection process is the addition of remedial expectations into the rule section of the final NCP. EPA discussed in the preamble to the proposed rule the type of remedies that were "expected" to result from the remedy selection process;[191] to highlight this important guidance, the expectations were moved into the text of the final rule.[192] These statements are not intended to *require* the selection of any particular remedy at specific sites, or to substitute for the site-specific balancing of the nine criteria during remedy selection. Rather, they are intended to educate decisionmakers and the public as to the type of remedies that EPA has selected in certain situations, so that learning will not be unnecessarily repeated and an appropriate range of alternatives may be considered.[193]

For example, it is the Agency's experience and expectation that highly mobile wastes need to be treated, and that where

highly mobile contaminants exist, the lead agency should focus on the development of treatment alternatives. Thus, the rule states that "EPA expects to use treatment to address the principal threats posed by a site, wherever practicable."[194] Similarly, it is the Agency's experience and expectation that large volumes of low contamination wastes (e.g., large municipal landfills) are most appropriately contained; thus, a focus on the development of engineering control alternatives is recommended for such cases.[195]

The expectations also recognize that in many cases, the appropriate remedy may include a combination of treatment and containment, such as where the levels of contamination vary over a site. The Agency would expect in such cases to treat hot spots of high level, mobile contaminants, and certain areas oflow contamination.[196]

There may also be sites where the expectations will not prove useful under the circumstances of the release. In any case, as noted above,the expectations are not intended to avoid the full remedy selection analysis; each remedy must still be explained and justified in a proposed plan. The preamble to the final NCP makes clear that reliance on an expectation alone is not reason enough to select a particular remedy.

Similar to expectations in the final rule are a number of "management principles" to offer programmatic guidance for the remedy selection process.[197] One of the most frequently discussed is the principle that there should be a "bias for action" at Superfund sites. This means that actions should be taken as early as possible when necessary or appropriate to achieve significant risk reduction quickly.[198] This policy may be implemented by the initiation of operable units in phases or the use of removal actions to address immediate threats at NPL sites.[199]

A second fundamental management principle is that of "streamlining" the Superfund process. The site response program has been criticized for performing unnecessarily long studies and data collection. Streamlining is a concept of tailoring the data-collection needs, the evaluation of alternatives, and the documentation of the selected remedy to reflect the scope and complexity of the site-specific problems.[200] For example, the preamble to the final rule discusses the use of a focused or streamlined FS where site problems are straightforward such that it would be inappropriate to develop a full range of alternatives (or where a removal action has limited the amount of additional work necessary).[201]

The Agency believes that the addition of these expectations and principles to the remedy selection framework will help to expedite action and lead to similar remedies at similar sites. Here, as with much of the final rule, the test will be in the implementation.

* *Fund-Balancing Waiver.* EPA also sought to add structure to the remedy selection process by identifying a threshold at which a waiver of ARARs based on a balancing of demands on the Fund would be "routinely considered." Comment was specifically solicited on this issue.[202]

As noted above, CERCLA § 121(d)(4) sets out six limited circumstances in which an environmental standard that is applicable or relevant and appropriate may be waived by EPA foran on-site action. The sixth waiver, called the Fund-balancing waiver, is available only for remedial actions undertaken using Fund monies and only where the attainment of the standard "will not provide a balance" between the need for protection of public health and the environment and the availability of amounts from the Fund to respond to other seriously contaminated sites.[203] This waiver has been used sparingly to date.[204] After a review of the public comments submitted, the preamble to the final rule provides that the Agency will routinely consider the Fund-balancing waiver in cases where the cost of an operable unit is more than four times the average operable unit cost (the average operable unit cost is now approximately $ 15 million, resulting in a trigger of approximately $ 60 million for routine consideration of this waiver).[205]

It is difficult to predict the impact or significance of this change. Certainly, it means that the Fund-balancing waiver will be considered more often. However, this is only a policy, and the policy merely states that the regions should **[20 ELR 10240]** "consider" the waiver when the cost of an operable unit exceeds the threshold.

* *Role of Cost.* The role of cost in remedy selection has been one of the most hotly disputed issues in the Superfund program. Many PRP groups argue that cost must be a major factor in deciding on an appropriate remedy and note that the requirement to select "cost-effective" remedies appears in CERCLA § 121(a) and (b). Many environmentalists and some legislators have argued that cost is given too much emphasis in remedy selection and have posited that cost should be considered only in determining the cost-efficient method for implementing a selected remedy. In effect, they argue that the proper cleanup level for a site should be set, and then a remedy should be selected to attain that level,

without consideration of cost.[206]

In the preamble to the final rule, EPA discussed the role of cost at great length.[207] The Agency stated that it agrees that cost should not be considered in setting the protective level in situations where a specific ARAR defines the cleanup level that must be achieved at the site (e.g., where an MCLG above zero is available for contaminants in drinkable groundwater). However, where ARARs are not available for the specific contaminants of concern (or where ARARs are not sufficiently protective[208]), the Agency defines protectiveness in terms of the risk range, and several alternative remedial technologies may be capable of achieving protection within that range. Under such circumstances, cost may be one of the factors to consider in choosing among the available technologies.

It is important to note, however, that cost and other factors may be considered only to distinguish among alternatives that have been found to be protective of human health and the environment and in compliance with ARARs (or to have justified a waiver).

Cost is specifically considered during the final balancing process, as the Agency attempts to satisfy two statutory mandates of CERCLA § 121(b)(1) by identifying *the* remedial alternative that utilizes "permanent solutions and treatment . . . to the maximum extent practicable" while being cost-effective. These determinations are intended to be made simultaneously; however, for ease of analysis, they are discussed separately in the NCP.

Cost-Effectiveness. The determination whether a proposed remedial alternative is cost-effective is based on an evaluation of several of the nine criteria. First, overall effectiveness is assessed based on: long-term effectiveness and permanence; reduction of mobility, toxicity, or volume through treatment; and short-term effectiveness. The overall effectiveness is then compared to the cost of the alternative to determine if they are "in proportion" to one another[209] (i.e., does the approach represent a reasonable value for the money?[210]). In making this comparison, the decisionmaker is not directed by the NCP to place special emphasis on the factors of "reduction of toxicity, mobility or volume through treatment" and "long-term effectiveness and permanence," as is required during the assessment of permanence and treatment to the maximum extent practicable (as provided in NCP § 300.430(f)(1)(ii)(E)). However, because "effectiveness" is measured based on those two factors (plus short-term effectiveness), an alternative that is high in treatment and permanence will be considered more effective and thus can justify a relatively higher cost (high effectiveness and high cost would be in proportion). The comparison of cost to effectiveness is performed for each alternative individually and for all the alternatives in relation to one another.[211] This latter analysis allows the Agency to identify alternatives that produce an incremental increase in effectiveness for a reasonable increase in cost, based on a comparison of corresponding increases for other alternatives. Several alternatives may be found to be cost-effective.[212]

Although the statute requires EPA to select cost-effective remedies, EPA has decided not to consider cost-effectiveness as a threshold criterion on a par with protectiveness and compliance with ARARs. This is based in part on the fact that unlike the "protectiveness" and "compliance with ARARs" determinations, which can be reached for each alternative individually, the cost-effectiveness finding requires a comparison of each alternative in relation to other alternatives and the consideration of several factors during a balancing phase. (The same comment is true of the statutory mandate to utilize permanent solutions and treatment to the maximum extent practicable.) In addition, the preamble to the final rule suggests that reliable information on cost will not be generally available as early in the process as is information on a remedial technology's protectiveness, and thus cost should not be used too early in the final balancing process to eliminate viable alternatives.[213]

Cost and Practicability. The statutory requirement to select *the* alternative (there is only one) that utilizes permanence and treatment to the maximum extent practicable[214] is fulfilled by selecting the protective, ARAR-compliant alternative that provides the best balance of tradeoffs among alternatives based on a review of all the balancing and modifying criteria (if the latter are known).[215] It is a subjective judgment, but the NCP sets out some parameters to help assure consistency in its application. Specifically, the NCP requires that during the balancing process, the factors of long-term effectiveness and permanence and reduction in toxicity, mobility, or volume should be emphasized, and that the "preference for treatment as a principal element" and the "bias against off-site land disposal of untreated wastes" must be considered.[216] **[20 ELR 10241]** This statutory determination is the final step in the process before a remedy is recommended in the proposed plan.

Although cost, as one of the nine criteria, is considered in making this determination, it is not expected to play a major role. The importance of almost every other criterion to this determination is emphasized by the NCP. First, the two

threshold criteria must already have been met for any alternative considered during the final balancing. Second, the rule places special emphasis on the treatment and effectiveness factors during this determination; those criteria will be "the most important, decisive factors in remedy selection when the alternatives perform similarly with respect to other balancing criteria."[217] Third, the NCP highlights the two modifying criteria[218] and "implementability"[219] as important considerations in fulfilling this statutory requirement. Thus, cost is one of only two of the nine criteria the use of which is not stressed for this determination. It is also noteworthy that cost will not always be a differentiating factor between remedial alternatives; the final remedy selection will generally focus on tradeoffs based on only one or two criteria.

Cost as a Screen. Cost may also be considered during one other aspect of the remedy selection process: screening, when alternatives that are deemed not to be viable are eliminated from more thorough consideration. The use of cost at this early stage has also been the subject of considerable comment. Many were concerned that cost would be used to screen out appropriate remedial technologies early in the process before they were given a fair evaluation and without the benefit of public review and comment.

The final NCP has been revised to narrow the circumstances under which cost may be considered when screening alternatives at the start of the evaluation process. Specifically, the final rule provides that a given alternative may be eliminated during screening if it is determined that the cost of the alternative is "grossly excessive" compared with its effectiveness.[220] This provision will allow the Agency to avoid the need to conduct resource-intensive analyses of extreme and unrealistic options, while at the same time not allowing cost to compromise consideration of viable options that may simply be more expensive than other alternatives.[221]

* *Definition of "On-site" and Application to Noncontiguous facilities.* Critical to both the type and extent of remedies that may be selected is the definition of the CERCLA site. The site definition is important because "[n]o Federal, State, or local permit shall be required for the portion of any removal or remedial action conducted *entirely onsite* . . . ."[222] Further, the process of meeting ARARs — and the substantive versus administrative distinction — only applies to on-site actions.[223] However, the term "on-site" is undefined in the statute.

In the proposed NCP, EPA took comment on several possible interpretations of "on-site" and suggested defining the term in a manner consistent with statutory intent and the practical realities of site response.[224] Specifically, the Agency sought to address situations in which a treatment plant needs to be located on uncontaminated property over a plume of contamination, or a sludge stabilization tank needs to be located next to, but not in, a sludge pit; thus, the proposal suggested defining "on-site" as the actual contamination plus limited surrounding areas.

After reviewing public comments, the Agency adopted the approach recommended in the proposal and defined "on-site" as consisting of "the areal extent of contamination and all suitable areas in very close proximity to the contamination necessary for implementation of the response action."[225] By defining the site to include contaminated areas plus those areas in "very close proximity" and "necessary" to implementation of the response, the Agency sought to give pragmatic effect to the statutory provision that on-site CERCLA remedies should not be required to obtain a permit, while not unduly expanding the commonsense concept of what actions are "entirely onsite."[226]

The exemption from permit requirements for on-site actions has even greater implications when considered in conjunction with EPA's power to address releases at noncontiguous facilities. CERCLA § 104(d)(4) allows the Agency broad discretion to treat noncontiguous facilities as one site for the purpose of taking response action.[227] The only limitations prescribed by the statute are that the facilities be reasonably related either "on the basis of geography" *or* "on the basis of the threat, or potential threat to the public health or welfare or the environment." Once the decision is made to treat two or more facilities as one site, no permit will be required for the management of waste transferred from one part of the aggregated site to the other.

[20 ELR 10242]

The preamble to the final rule recognizes the significant impact such aggregations could have, because in theory one Superfund site could come to be treated as the disposal site for many Superfund sites. Such a result could be of concern to communities, affected states, and PRPs. Thus, the Agency set out a number of factors that should be considered in deciding whether it makes sense under CERCLA to treat two or more contamination problems as one.[228]

First, the decisionmaker would look into whether the wastes from the noncontiguous facilities are appropriate for

similar treatment or disposal. Second, the possible transportation risks would be evaluated (e.g., the risks might be significant where the wastes are highly volatile or the transfer would take place through heavily populated areas). Third, the views and consent of the affected state(s) and public should be solicited. And fourth, the cost-effectiveness of the aggregated response should be evaluated (including the incremental cost of transportation).[229] The Agency rejected the idea that a specific distance could be defined for saying when aggregation would or would not be appropriate. Rather, the final rule contemplates a case-by-case evaluation of all factors as part of the ROD process, with opportunity for comment by all interested parties.

During the NCP comment period, a number of PRPs raised the concern that they could face increased liability if two or more Superfund sites were treated as one.[230] Such issues could be raised during comments on the site-specific aggregation decision. Of course, liability issues potentially arise from every response action, whether waste is left on site, sent to an off-site disposal facility, or sent to a treatment or disposal facility that is part of a remedy at a noncontiguous Superfund facility. It is not obvious that the third option, with its inherent EPA oversight, poses a greater risk of liability than the first two.

State Issues

* *NPL Deferral.* Of all the issues in the proposed NCP, the one that received the most public comments was whether EPA should defer the listing of sites on the NPL based on the availability of "some" response authority under other federal or state laws. (A deferral policy already existed, and continues, for most private sites that are subject to federal or state-authorized RCRA programs, and for sites that are regulated under licenses issued by the Nuclear Regulatory Commission.[231]) Although many states argued that they have the capability to clean up sites as well as or better than the federal government, the idea of state deferral was "deferred" in the final rule.[232] Congressional staff have indicated that the concept of deferring sites from the NPL may be reviewed by Congress during CERCLA reauthorization; a possibly limited deferral for "CERCLA-quality" state programs may be considered at that time.[233]

* *Role of States in Response Actions.* The role of states in the CERCLA response process was a major part of the NCP revisions. In line with the mandate of CERCLA § 121(f), the Agency sought to spell out the opportunities and methods for state involvement throughout the site evaluation and response process; this initiative resulted in a new Subpart F to the NCP. It is meant to establish a "partnership" between the federal and state governments at CERCLA sites.

Perhaps most significantly, the final revisions set out an expanded role for states in the remedy selection portion of the process. For Fund-financed sites, a state may be designated as the lead agency where it demonstrates certain capabilities, and thereby performs the RI/FS, drafts the proposed plan and ROD, and conducts the remedial design/remedial action (RD/RA) phases of the response. This affords the states a major role over remedy selection: by drafting recommended alternatives and proposing the remedy, the state recommendations can be expected to strongly influence the final decision in many cases. (The deference accorded to a state recommendation will likely be greatest where the state has a proven track record of cleaning up sites.) At the same time, the final rule provides that for Fund-financed actions, a state may not publish a proposed plan that EPA has not approved,[234] and where the state does prepare the ROD, it must seek EPA's concurrence and adoption of the remedy specified therein.[235]

For EPA-lead sites, the states also have considerable power. First, the NCP specifically requires EPA to seek state concurrence on its remedies,[236] and in extreme cases where the state disagrees with a proposed Fund-financed remedy, it may withhold the required state assurances under CERCLA § 104(c)(3). (At EPA-lead enforcement sites, the states may challenge the waiver of ARARs under CERCLA § 121(f)(2).) The final rule also discusses dispute resolution procedures to work out state/federal conflicts.[237]

Alternatively, the state may take a non-Fund-financed, state-lead enforcement action at a site under state law (this is likely where a solvent PRP is available). EPA concurrence is not required for such actions, although it may be requested.[238] The availability of EPA concurrence on state-lead enforcement sites is significant in that it may help states to achieve settlements with PRPs.[239]

Some states — those that have implemented aggressive cleanup programs — may argue that EPA has not gone far **[20 ELR 10243]** enough in turning over remedy selection authority to the states, and indeed, this sentiment was reflected in several comments on the NCP. However, EPA specifically declined to delegate the ultimate CERCLA remedy selection power to states in the final rule.[240] The preamble explains the Agency's view that delegation of final decisionmaking

authority on remedy selection is not appropriate, and that although an expanded state role is required under CERCLA § 121(f), EPA should retainprimary responsibility for the federal Superfund program. (Indeed, the role carved out for states in § 121(f) may be argued to imply that EPA should retain final decisionmaking authority.) There is also a general concern about the propriety of allowing states to commit Fund dollars without EPA oversight. The issue of state remedy selection, like the issue of deferral to states of potential NPL sites, may be the subject of congressional attention during the reauthorization of CERCLA.[241]

* *Enhancement of Remedies.* The issue of whether a state may "enhance" an EPA-selected remedy, and under what conditions, has generated a significant amount of interest and controversy. Different people mean different things when they discuss "enhancement," and in fact, the term is often misused. Historically, the term has been used to include diverse types of potential state actions, from seeking to increase the level of cleanup, to building a larger treatment plant that may be used by the state after the CERCLA action is completed, to insisting on requirements that EPA believes are inappropriate or that could conflict with the EPA-selected remedy.

The final rule separates consideration of state-proposed actions that are (1) necessary to the selected action (those would be handled by ROD amendment or ESD); (2) not necessary to the selected action, but not inconsistent with the CERCLA remedy (these would be allowed in the Agency's discretion if the state assumed financial and oversight responsibility for the change); and (3) in conflict with EPA decisions.[242]

The preamble notes, as a threshold matter, that states already have significant opportunities during the RI/FS process leading up to remedy selection to suggest to EPA that state standards should be considered ARARs and thus attained, or that the proposed remedy should be expanded in scope. In most cases, these issues should be worked out prior to remedy selection and they are more properly viewed as remedy selection issues, not enhancement.[243] The issue of enhancing or supplementing the selected remedy is more often an issue in the context of post-ROD suggestions for change.

Where, after the ROD, the state asks EPA to change or expand the selected remedy and EPA agrees that the state's suggestions are appropriate and necessary to protect human health and the environment, the Agency may include the changes in the Fund-financed remedy through a ROD amendment or ESD (consistent with final rule § 300.435(c)(2)), in which case the Agency would share in the costs of the modified or additional activity. If the Agency concludes that the state-suggested changes or expansions are not necessary to the selected remedial action, the Agency will not modify the ROD or pay for the additional action; however, the Agency may still decide to allow the additional action to proceed concurrent with the EPA-selected remedy.

Where EPA finds that the proposed change[244] or expansion is not necessary to the EPA-selected remedy, but would not conflict or be inconsistent with it, the Agency may agree to integrate the proposed change or expansion into the planned CERCLA remedial work, but only if the state agrees to fund and oversee the necessary changes or additions. For example, the state may want a groundwater system to run longer than planned in order to attain water quality levels beyond those required under CERCLA, or the state may want to extend a water line outside the Superfund site in anticipation of expected residential or industrial development in the area. Such changes or expansions that would not conflict or be inconsistent with the EPA-selected remedy would generally be accommodated, on the condition that the state fund and supervise the change or expansion.

In instances where the state requests, and pays for, an incremental increase in the cleanup level, a lively debate can be expected between the state and any PRPs over whether the costs of such enhancements may be recovered in a cost recovery action. The state would be expected to argue that even if the cleanup is more than the minimum required under the NCP, it is "not inconsistent with the NCP" for purposes of cost recovery under CERCLA § 107(a)(4)(A). Interestingly, while CERCLA § 107(a)(4)(B) allows private parties to recover only "necessary" costs consistent with the NCP, the word "necessary" is absent from the cost recovery provision of CERCLA § 107(a)(4)(A), which applies to states.

Finally, where a state-proposed change or expansion would conflict or be inconsistent with the EPA-selected remedy, it would not be appropriate to allow the state to proceed without EPA approval.[245] Indeed, to do so would be tantamount to giving the states a veto power over EPA remedial action decisions.

* *Superfund Memorandum of Agreement.* A major step in facilitating an EPA/state partnership under the NCP is

expected to be the development of the Superfund **[20 ELR 10244]** Memorandum of Agreement (SMOA). SMOAs are voluntary, general agreements (not site-specific) that may be used to establish the general framework for the EPA/state working relationship, to define the roles of the lead and support agencies, and to provide for EPA oversight. They are the recommended method for working out the interrelationship between state and federal authorities.

In the proposed rule, EPA had suggested making SMOAs prerequisites to certain actions under CERCLA (e.g., the designation of a state as lead agency for a non-Fund financed action).[246] However, a number of states strongly opposed a "requirement" to enter into a SMOA, and the final rule makes clear that SMOAs are not required as a condition for the state acting as lead agency. Instead, the final NCP provides that a number of issues — including annual EPA/state consultations, review by the support agency, timetables for the identification of ARARs, and dispute resolution — "may" be agreed to by the state and region in a SMOA. Where there is no SMOA, the rule sets out minimum requirements that would apply.[247]

* *State Cost Share for O&M.* One of the most sensitive issues for states in the final NCP has been the extent of state responsibility to pay O&M costs for CERCLA remedial actions. For remedial actions, the federal and state governments share costs according to the formula in CERCLA § 104(c)(3), generally 90 percent federal, 10 percent state.[248] Once the remedy has been constructed and is operational, the costs and responsibility for operating and maintaining the remedy transfer to the state. The final rule provides that states are responsible for assuring the "operation and maintenance of implemented remedial actions for the expected life of those actions."[249] The preamble explains that this position is consistent with the statute and long-standing EPA policy.[250]

SARA added to CERCLA a new § 104(c)(6), providing that for the purposes of CERCLA § 104(c)(3) — which includes the cost share provision — treatment or other measures necessary to restore ground or surface water quality would be considered remedial action as compared with O&M until protective levels are attained or for 10 years, whichever is earlier. By virtue of being included in the term "remedial action," restoration measures would qualify for the federal cost share.

A number of states commented that this section should be read expansively to include any measures that contribute to full restoration (e.g., the maintenance of caps and leachate collection systems). They argued that if such measures are not maintained, water quality could degrade and restoration would not occur. The final NCP takes the position that "treatment or other measures *necessary* to restore ground and surface water" do not include source control maintenance measures (like landfill cap maintenance or leachate collection systems) or measures whose primary purpose is to provide drinking water.[251] Although EPA recognized that a failure to maintain source control maintenance measures could result in some additional contamination of ground or surface water, those measures are not appropriately considered "necessary for restoration" and therefore "remedial actions" under CERCLA § 104(c)(6). Rather, they fall within the category of normal operation and maintenance activities.

The legislative history cited in the preamble to the final rule suggests that Congress sought, through § 104(c)(6), to correct an imbalance in the manner in which water body contamination was treated as compared with surface contamination.[252] In the case of surface cleanup, an action would be considered remedial — and subject to a cost share — throughout construction of engineering controls, excavation of the contaminated area, or until protective levels were otherwise achieved. However, for ground and surface water, actions were considered remedial only up to the point where the treatment plant was built and operational, regardless of remaining contaminant levels in the water. The solution adopted was to include within the definition of "remedial action" those ground and surface water restoration efforts taken up to the point that protective levels were achieved, or for 10 years, if earlier. The 10-year time limitation was added out of the recognition that groundwater remedies will generally take many years to complete and would be a major drain on the Superfund program if EPA were required to fund them.[253]

In the preamble to the final rule, EPA explained that the states' view would lead to results that are inconsistent with the intent of Congress and with common sense. If source control maintenance and other O&M activities are necessary for restoration, restoration can never be considered complete as long as O&M is required. This is clearly not the intent of Congress, since § 104(c)(6) contemplates that restoration may be considered complete when protective levels are achieved if in less than 10 years, even if O&M continues. The states' interpretation would also lead to a situation where virtually all on-site O&M activities could be characterized as remedial action under § 104(c)(6), on the theory that if they were not maintained, they might degrade the ground/surface water; such a result would appear to exceed the limited intent of Congress.

The final NCP also takes notice of the fact that groundwater pump-and-treat technologies may reach a point at which restoration activities no longer result in significant reductions in contaminant concentrations. Thus, the rule provides that restoration may be considered complete for the purposes of CERCLA § 104(c)(6) when protective levels are achieved, in 10 years, *or* when such a steady-state situation is reached.[254]

Finally, the preamble to the final rule states that EPA will consider funding O&M for "temporary or interim measures" to control or prevent further releases, where no final remedy for a unit has yet been selected (e.g., maintenanceof a *temporary* landfill cap).[255] The rationale **[20 ELR 10245]** behind this policy is that interim measures may be necessary to stabilize a site while EPA is deciding on a final remedy; such measures are, in effect, part of the remedy. However, if EPA selects a final solution for an operable unit (e.g., a final cap on a contaminant source), the maintenance of that unit would be considered normal O&M for which the state would be responsible.

Administrative Record Issues (Subpart I)

This subpart implements CERCLA § 113(k) by setting out the rules for establishing an administrative record file and by explaining what material may be included in, or excluded from, the administrative record.

* *Purposes of a Record.* The administrative record for a site serves two basic purposes. First, it constitutes the record for judicial review. CERCLA § 113(j) specifically provides that judicial review of the adequacy of any CERCLA response will generally be limited to the record assembled by the Agency (rather than allowing for *de novo* review), although courts may go beyond the record and allow for the introduction of supplementary materials in limited cases. The public and PRPs have opportunities throughout the process to add materials to the administrative record file, particularly during the formal public comment period. All response decisions not dictated by CERCLA or the NCP should be justified in the administrative record.

The second fundamental purpose of establishing a record (and file) is to provide interested parties an opportunity to review the response actions proposed for a site, so that they may meaningfully participate in the response selection process.

* *Administrative Record File vs. Administrative Record.* The rule makes a distinction between the administrative record "file" and the administrative record. This is because typically, the formal record for judicial review is not compiled until after EPA selects a response action;[256] the administrative record file is the mechanism for compiling the formal record, and making it publicly available, as early in the process as possible. Further, the Agency encourages the placement of even potentially relevant materials into the administrative record file, leaving the process of reviewing documents for relevance until the later compilation of the formal record.

The administrative record file should not be confused with the information repository for a site. Although some of the same documents may be contained in both files, and both provide the public with relevant information, they are fundamentally different. The information repository contains *general* documents that relate to a Superfund site and to the Superfund program, including background information and policy guides. By contrast, the administrative record file contains site-specific data, comments, and other documents used in the selection of a *particular* response action.[257]

For remedial actions, the administrative record file will be established after the start of the RI;[258] for removal actions with a planning period of at least six months, the record file will be established when the engineering evaluation/cost analysis is made available;[259] and for removals with a planning period of less than six months, the administrative record file will be made available no later than 60 days after initiation of the action.[260] Except for emergency removals completed within 30 days of initiation, the administrative record file must be located at or near the site and at another central location for public review.[261]

* *What Is In/Out of the Administrative Record.* The formal administrative record is compiled based on a review of the administrative record file and will include those documents that "form the basis for the selection of a response action,"[262] consistent with the mandate in CERCLA § 113(k) for the establishment of "an administrative record upon which the President [or his delegate, EPA] shall base the selection of a response action." The record will typically include factual information/data; analyses of factual information; policy and guidance documents; public participation documents, including public comments; decision documents throughout the process; orders; and responses to comments.[263]

At the same time, irrelevant, duplicative, and certain predecisional documents (e.g., staff-level options papers and drafts of final documents) would not necessarily be included in the administrative record, unless such documents contain information that forms the basis of selection of the response action and the information is not otherwise included in the administrative record.[264] A contrary policy of including deliberative and predecisional documents in the record could have a chilling effect on the free exchange of ideas within EPA. Privileged information that formed the basis for a response action decision will be included in a confidential section of the administrative record.[265]

Although some commenters expressed the concern during the rulemaking that the final administrative record may not include all appropriate materials, the preamble to the final rule emphasizes that the record will include appropriate information even if it does not support the selected remedy. For example, comments submitted during the formal public comment period must be considered by the Agency and will be included in the record, even if they are ultimately rejected.[266] In addition, as a matter of policy, EPA will attempt to consider significant comment submitted prior to the comment period. However, to the extent a party wishes to ensure that its comments will be considered by the Agency and made part of the record, **[20 ELR 10246]** those comments should be submitted (or resubmitted during the formal public comment period on the proposed plan).[267]

Interested persons may also submit technical studies or other information to EPA throughout the process leading up to final remedy selection,[268] and the Agency will generally consider such information, if relevant and timely submitted. Such studies would then be placed in the administrative record file. Agency consideration of such studies will usually be reflected in subsequent documents or analyses performed by the Agency and included in the record file. Subject to the qualifications discussed above, information placed in the record file for a proposed response action and relevant to the selection of that response action, whether in support of or in opposition to the selected response action, will become part of the final administrative record for the response selection decision.[269] Again, if there are questions as to whether all or part of a study was considered by the Agency or whether it will be a part of the final record, parties may wish to refer to the studies during the public comment period.

* *Adding Documents Post-ROD.* After the ROD is signed, certain classes of documents may be added to the administrative record files, including documents relating to remedy selection issues that the ROD reserves or does not address; ESD notices; documents relating to ROD amendments; and certain public comments that substantially support the need to significantly alter the response action.[270] EPA may also establish separate comment periods on issues or documents of concern, and such documents — and the comments on them — will be made a part of the administrative record.[271]

The need to add documents to the record after remedy selection is a logical reflection of the fact that the ROD does not resolve or even contemplate all issues concerning the response action; indeed, as noted above, the ROD may specifically reserve certain issues. In addition, it is common, if not inevitable, for issues to arise during the design and implementation phases of the remedy, requiring the Agency to refine, modify, or clarify aspects of the response action. Documents relating to these activities are necessary components of the record for reviewing the Agency's action.

Public Participation

The new administrative record provisions are an important component of the Agency's efforts to increase public involvement and awareness of CERCLA actions. In addition to those provisions, the final NCP also incorporates new community relations requirements, in response to the mandate in CERCLA § 117. Unlike the 1985 NCP, in which community relations requirements were addressed separately in one section,[272] the 1990 revisions incorporate community relations requirements into each of the sections relating to the different phases of response (i.e., removal actions, RI/FSs, selection of remedy, and RD/RA).[273]

During Removal Actions. The amount of public participation required by the NCP during removal actions has been greatly expanded from the simple requirements in the 1985 NCP to designate a spokesman and to develop a formal community relations plan for removal actions extending beyond 45 days. The NCP now includes requirements regarding the preparation and availability of an administrative record file, a comment period, and interviews with local officials and interested persons.[274] However, the timing and extent of the public participation required vary depending on whether the removal is considered an emergency, time-critical, or non-time-critical action.[275] The extent of public participation also depends, to a large degree, on the needs and wishes of the public. NCP sets out the basic community relations requirements that EPA has found through experience to be necessary and allows for greater involvement

where public interest is high.[276] For example, the final rule allows for an extended comment period upon request.[277]

During the RI/FS. The final rule also increased the opportunities for public participation during the investigatory and alternatives assessment stages of the process. The revisions expand the use of the community relations plan (CRP) to provide greater opportunities for public participation in decisionmaking, require information repositories as well as administrative record files, more prominently discuss the availability of technical assistance grants (TAGs),[278] and provide for interviews of members of the local community to better assess the views of affected residents, officials and other interested parties.[279]

During Remedial Actions. Similarly, the 1990 NCP revisions increase community relations and participation efforts during remedial actions. The revisions implement CERCLA § 117 by requiring the preparation and publication of a proposed plan, describing the remedial alternatives analyzed, and proposing a recommended alternative.[280] In a change from the proposed rule, the final revisions allow the public 30 days to comment on the proposed plan, plus at least an additional 30 days upon simple request.[281]

Under the final rule, the Agency will respond to significant comments received during the formal public comment period on the proposed plan for remedial response, as required under CERCLA § 117. In addition, the final rule **[20 ELR 10247]** "encourages" the lead agency to respond to significant comments submitted *prior* to the public comment period.[282]

Post-ROD. After the ROD has been signed and the design phase begins, the CRP will be reviewed and, where appropriate, revised to describe public involvement opportunities during RD/RA.[284]

There are several possible opportunities for public comment and involvement during implementation of the remedy. If the Agency decides to amend the ROD, a new proposed plan/public comment period will be established.[285] This would generally occur where the Agency changes the remedy in a fundamental way, such as deciding that incineration instead of containment should be performed due to new information on the levels of organic constituents in the waste. In effect, such a change constitutes a new remedy selection, and the public would have a strong interest in providing views to the Agency. On the other hand, if the Agency changes the remedy in a significant but nonfundamental fashion, an ESD notice may be issued, consistent with CERCLA § 117(c).[286]

Neither the statute nor the NCP revisions require a new public comment period in the event that an ESD notice is issued. This is based in large part on the recognition that design and implementation will, in almost all cases, result in some refinements or modifications of the selected remedy. It would be very disruptive to require a new formal public comment and response to comment for alterations in the scope or cost of an already reviewed remedy (e.g., where 25 percent more soil needs to be excavated and treated, or where several more monitoring wells need to be installed). Further, additional comment is arguably unnecessary because the Agency will already have received the public's views of the basic remedial approach. Again, if the changes rise to the level of a *fundamental* change in the remedy, a formal ROD amendment would be required. (In any case, the Agency has the ability to provide additional public comment periods in appropriate cases,[287] and may well do so where ESDs relate to contentious issues.)

Moreover, the public is not without an avenue to voice concerns where EPA issues an ESD notice. The ESD will be made available to the public, and concerned parties may submit comments to the Agency. The final rule specifically provides that the lead agency "is required" to consider comments submitted by interested persons after the close of the public comment period if the comments contain "significant" new information that could not have been submitted during the public comment period and which "substantially support the need to significantly alter the response action."[288]

Admittedly, this is not an invitation to frequent public comment after the remedy has started, but it is consistent with the need for the Agency to get on with the business of accomplishing cleanups. If public comments — including PRP comments — could, by right, require formal response and a halt in Agency action, the program would be subject to endless delays. Such a result would be inconsistent with both the intent in CERCLA to accomplish cleanups expeditiously and the express provision in CERCLA § 113(h) that no judicial review of CERCLA response actions may be obtained prior to enforcement or completion of the response action. The provision does, however, give the public (and PRPs) the opportunity to raise significant issues to EPA at any point in the RD/RA process.

PRP Issues

Several specific issues not already discussed may hold special interest for PRPs.

Private Party Cost Recovery Actions ("Consistency With the NCP"). One of the most important issues to private parties is the ability to recover their cleanup costs under CERCLA's cost recovery provision (§ 107). CERCLA § 107(a)(4)(B) provides that parties other than the federal government, states, or Indian tribes may recover necessary costs of response that are incurred consistent with the NCP.[289] The issue of when a private party action is "consistent with the NCP" has long been a contentious one, both in and out of the courts.[290] EPA addressed this issue in a new Subpart H;[291] the approach taken in the final rule represents a dramatic change from both the proposed rule and from the 1985 NCP.

The proposed rule provided that any person may undertake a response action to reduce or eliminate a release of a hazardous substance. It also set out a list of those NCP provisions for which compliance would be required for a private party response action to be considered consistent with the NCP for purposes of cost recovery actions under CERCLA § 107.[292]

In the final rule, EPA defines "consistency with the NCP" as whether a private party cleanup has, *when evaluated as a whole,* achieved "substantial compliance" with potentially applicable NCP requirements and resulted in a CERCLA-quality cleanup.[293] (CERCLA § 107(a)(4)(B) **[20 ELR 10248]** also requires that the private party show that the costs incurred were "necessary" cleanup costs.)

This is a major change. The 1985 and the proposed NCP had required provision-by-provision comparisons between the elements of private actions and specific requirements in the NCP. This approach had allowed (if not encouraged) the parties that were responsible for the pollution to attempt to pick apart basically sound remedies, and thereby avoid paying their share of the cleanup costs. The revised approach calls for a less technical determination of whether a cleanup, when evaluated as a whole, appears to be along the lines contemplated by CERCLA (i.e., whether it is in "substantial compliance" with specified NCP requirements and has resulted in a CERCLA-quality cleanup). The rule specifically states that cost recovery actions should not be defeated based on immaterial or insubstantial deviations from the detailed set of NCP provisions (whether federal or private).[294]

The final rule does retain the list of potentially relevant NCP provisions that has appeared in prior rules,[295] but as guidance, not as a list of fixed requirements.[296] The retention of this list is intended to help parties who are uncertain as to what portions of the NCP might apply to them.[297] It also provides some standard against which the substantial compliance test can be applied. (A private party can eliminate any uncertainty about achieving substantial compliance by meeting the full set of requirements identified by EPA as potentially relevant to private actions.)

A new element in the rule is the requirements for "CERCLA-quality cleanups." This determination is to be made based on a comparison of the action with the principal mandates of SARA: the basic remedy selection requirements of CERCLA § 121(b)(1) (i.e., the remedial action must be "protective of human health and the environment," utilize "permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable," and be "cost-effective"); the requirement to attain ARARs in § 121(d)(2); and the requirement to provide for meaningful public participation in § 117.[298]

EPA set this less restrictive test for cost recovery actions based on a belief that it is important to encourage private parties to perform voluntary cleanups of sites, and to remove unnecessary obstacles to their ability to recover their costs from the parties that are liable for the contamination. As noted above, many voluntary cleanups are being contested based on allegations that cleanups failed to meet the letter of the NCP, even if the spirit of the regulation was satisfied. The Agency concluded that such hyper-technical challenges were not in the best interest of environmental protection. At the same time, the new standard reflects the Agency's view that it is also important to encourage only environmentally sound cleanups, not any cleanup. The requirement for "CERCLA-quality cleanups" was intended to achieve this goal.

The NCP recognizes that in the final analysis, the courts will decide, on a case-by-case basis, whether cleanup actions are consistent with the NCP.[299] However, the establishment of which requirements apply to private actions and to what extent they must be met (literally or substantially) appear to be within the Agency's authority (CERCLA § 105(a) and

(b) authorize EPA to develop NCP procedures and requirements). Thus, the final rule attempts to set out a more lenient standard for review than that contained in previous rules.

* *Enforcement Issues.* The NCP sets out few enforcement-specific requirements. This is largely because of the need to maintain discretion in CERCLA's enforcement program. However, there are a number of enforcement issues addressed in the NCP that will be of interest to PRPs.

Perhaps the foremost enforcement issue is the perceived problem of dual enforcement under federal and state law. In effect, responsible parties want greater certainty that when they carry out a remedy under CERCLA, or under state law (in a non-Fund-financed, state-lead enforcement action), the cleanup will not be second-guessed by the other authority. The NCP has attempted to address this concern in part through the provisions of Subpart F.[300]

The major thrust of Subpart F is to set up a partnership between EPA and the states from the beginning to the end of a CERCLA action. The rule describes a formal process for concurrence between EPA and the states on remedies, and even provides for the availability of EPA concurrence on a non-Fund-financed, state-lead enforcement remedy.[301] (This latter possibility may help the states in concluding consent agreements with PRPs.) At EPA-lead enforcement sites, the NCP specifically requires EPA to notify the state of negotiations and to allow the state to participate.[302] When disagreements arise, the NCP contemplates the use of a dispute resolution process, preferably set out in a SMOA.[303] (The SMOA is hoped to be an important tool in minimizing inconsistencies between EPA and the state.) Thus, the new procedures and policies outlined in the NCP are intended to result in greater coordination of EPA and state efforts and enforcement strategies. Where irreconcilable conflicts occur despite these procedures, issues of federal preemption and interpretations of CERCLA § 122(e)(6) may become important.[304]

A related question raised by some commenters is whether **[20 ELR 10249]** a state may require a PRP to do more than EPA has ordered. To a large extent, the coordination steps outlined above are intended to avoid such a situation. However, the state may in some cases want EPA to go beyond its selected remedy; that issue is addressed above in the discussion on state issues and enhancement of remedies.

Another enforcement-related point is the Agency's position on whether a PRP may obtain access to a site to perform its own sampling as a basis for commenting on the EPA (or state-lead) action. The NCP preamble states that EPA opposes "unrestricted" access to a site by PRPs, on the grounds that unrestricted access, sampling, and testing could present a health threat to those residing on or near the site;[305] it could also jeopardize the efficient completion of the CERCLA action. PRPs do have the opportunity to perform the RI/FS under CERCLA § 104(a)(1);[306] if they decline, they may be deemed to have given up the right to be on-site at all times. (This may serve as an incentive for PRPs to get involved in the CERCLA process at the earliest stages.)

This is not to say that the PRPs have no opportunity for access where they decline to perform the RI/FS. The lead agency may be receptive, in appropriate cases, to PRP requests for limited access under supervision, to the same extent that the agency would allow access to community groups that are monitoring CERCLA actions under TAGs. Even where the PRPs do not have physical access to the site, they do have the opportunity to review government data and studies through the administrative record file, and the lead agency has a significant interest in assuring that the file is complete. EPA and the state will ultimately be able to recover their investigative and cleanup costs only if their actions are adequately justified in the administrative record. PRPs will have the opportunity to comment on information in the administrative record file during the comment period on the proposed plan.

* *Effect of Final Rule on Ongoing Actions.* Also of interest to PRPs will be the effect of the new revisions on ongoing actions. It is important to note that, starting on the effective date (April 9, 1990), the NCP applies to all CERCLA actions, even those that commenced prior to that date under the 1985 NCP.[307] (The exception is made for administrative record requirements, which apply to ongoingactions only "to the extent practicable."[308]) The preamble explains that this should not pose a hardship to ongoing actions, because most of the revisions were already common practice or are easily accommodated. Specifically, the final rule does not differ dramatically from the December 1988 proposed rule, which has been treated as guidance by the Agency. Further, the major changes from the 1985 NCP were those mandated by SARA, and those changes are (or should be) already reflected in ongoing actions. In addition, some of the more obvious problems of changing from an old system to a new one have been avoided by the provision on freezing ARARs — only standards that were identified as applicable or relevant and appropriate at the time of ROD signature must be attained even if new requirements are promulgated, except to the extent the new requirements call into

question the protectiveness of the selected remedy.[309]

A contrary decision — to grandfather ongoing actions — could inappropriately open the way for many actions to avoid important requirements. The preamble notes that many Superfund actions, especially groundwater restoration efforts, are long-term in nature (generally taking from 10 to 30 years), and even RI/FSs can take from one to two years to complete;[310] the mere fact that such actions have already been started does not justify a permanent waiver of new requirements.

* *Deletion From the NPL.* Historically, the first question asked by parties when they learn that their site has become a target of attention under CERCLA is, "How do we get off the National Priorities List?" The answer has always been limited: finish the cleanup of the site or show that no cleanup is necessary. The final NCP gives some indication that the process may be even more difficult in the future, or at least, slower.

EPA has indicated that the number of sites deleted from the NPL should not be viewed as the measure of success of the Superfund program. This is due in large part to the fact that although many NPL sites have been substantially cleaned up, they require long periods of time before remediation can be formally completed (such that deletion is appropriate). This is typically the case for sites where groundwater contamination is involved: The sources of the contamination (e.g., drums, lagoons, waste piles) have been removed or controlled, but groundwater treatment continues. NPL deletion is also an inappropriate barometer of the program's success because it ignores the success of the removal program, which has resulted in addressing immediate threats at hundreds of sites.

To better communicate the information on the number of sites that have been "substantially" cleaned up, the final rule establishes a new "Construction Completion" category for remedies that have been implemented and are operating properly, including sites awaiting deletion; sites awaiting five-year review and/or deletion; and sites undergoing long-term remedial action to achieve cleanup levels identified in the ROD (e.g., pumping and treating of groundwater).[311]

The language in the preamble to the final rule suggests that PRPs should not look for rapid deletion of sites subject to five-year review (i.e., sites where hazardous substances remain as part of the remedy).[312] EPA has stated through policy, and now has reaffirmed in the preamble to the NCP, that the Agency does not intend to delete sites from the NPL where hazardous substances remain until at least one five-year review has been conducted **[20 ELR 10250]** under CERCLA § 121(c) after completion of the remedial action.[313] The Administrator's Management Review of Superfund specifically suggested this approach.[314]

Although it may appear to be a major shift in the rules of the game (i.e., how to get out of Superfund) it is too early to evaluate the effect of this policy. First, the regulations, even in 1985, gave EPA the discretion to delete *or recategorize* NPL sites "where no further response is appropriate,"[315] and in that sense the new policy was always a potential approach. Second, it is unclear that the policy will be used to severely delay the deletion of sites that have been cleaned up to EPA's specifications. For instance, the requirement that a "five-year review" be conducted before deletion does not necessarily mean that five years must go by after remedy completion before a site may be deleted under the policy. The statute requires a review "no less often than each 5 years," and thus in appropriate cases, a review may follow the previous one by less than five-years (note that the first five-year review at a site must begin after the "initiation" — not completion — of the remedial action).[316]

Even after a site is deleted from the NPL, the Agency has authority to take further action at the site in appropriate cases, without the need to go through a new HRS scoring.[317]

* *No Expanded NPL Deferral Policy.* The issue of an expanded deferral policy is also of considerable interest to private parties. To some, the option of deferring NPL sites to states offered PRPs the possibility of working out reasonable cleanups with state officials in a less public, less expensive, and often less cumbersome, process than under CERCLA. Similarly, deferral to other federal programs could have allowed PRPs to work out cleanups under the standards and procedures of other laws.[318]

As discussed above, the Administrator decided to "defer" the idea of expanding the NPL deferral policy to include deferral to other federal authorities, state authorities, and enforcement orders.[319] It is expected that the concept will be reviewed by Congress during CERCLA reauthorization, and there are some indications that a limited deferral for

"CERCLA-quality" programs may be considered at that time.

Federal Agency Issues

Federal agencies wear several hats under CERCLA. They can be the lead agency for cleanup, acting as the delegate of the President; they can be the designated trustee for certain natural resources; and they can serve as an expert agency, providing guidance to the lead agency on appropriate ways to handle specific waste types.[320] The NCP discusses each of these roles.

* *Applicability of the NCP.* Facilities owned or operated by federal agencies or departments are subject to the requirements of the NCP in the same manner and to the extent they are applicable to private parties, except for those requirements that apply only to Fund-financed activities.[321]

In addition, there are certain requirements imposed by statute that apply specifically and separately to federal facility sites. For instance, the final NCP specifically codifies the provision in CERCLA § 120(e)(4) that remedies for federal facility sites that are on the NPL should be selected jointly by EPA and the federal agency that owns or operates the facility, except that in the case of disagreement, the EPA Administrator selects the remedy.[322] However, most requirements that are specific to federal sites will be discussed in a new Subpart K to the NCP, discussed below.

* *Subpart K Proposal.* The Agency plans to propose a new subpart to the NCP to create a "road map" for how the requirements of the NCP apply to federal agencies, which may be both the PRP and the cleanup authority (as the delegate of the President) at their own sites. Subpart K may also codify certain provisions of CERCLA § 120 that apply uniquely to federal facilities.

The issue that is expected to be of most concern in Subpart K is how cleanup requirements will apply at federal facility sites that are not on the NPL (at which EPA has no formal role in the selection of remedial actions[323]). The role of the states at non-NPL federal facilities could, if addressed in Subpart K, be a contentious issue.[324] Of course, the public will be afforded an opportunity to comment on Subpart K when it is proposed in the *Federal Register.*

* *Natural Resource Trustees.* Subpart G to the NCP discusses the role of certain federal agencies as trustees for natural resources.[325] Upon notification of actual or **[20 ELR 10251]** threatened injury to natural resources, the trustee may conduct resource surveys and assessments, seek the restoration of the resource, or take other actions.[326]

CERCLA authorizes the use of the Fund to clean up releases, but SARA § 517 restricts the use of Fund monies for the *restoration* or rehabilitation of natural resources. The task of restoring resources is left to the natural resource trustee, who under CERCLA § 107(f) has the authority to sue PRPs for such damages and to restore affected resources with such monies. However, the statute and the NCP do provide for extensive coordination between the primary CERCLA cleanup action and any restoration activity that may be deemed necessary by the trustee.[327]

* *Expertise and Support for EPA Cleanups.* Finally, the NCP provides a major role for other federal agencies in providing expertise to the lead agency to facilitate response actions under CERCLA.[328] Subpart B of the NCP also groups certain federal agencies into a National Response Team, which is responsible for national response and preparedness planning,[329] and the NCP establishes Regional Response Teams of federal, state, and local agencies, which are responsible for regional preparedness and planning as well as for providing advice and support to response site managers.[330]

Separate NCP Rulemakings

There are several rulemakings that are planned or in progress to further revise the NCP.

Revised Hazard Ranking System

On December 23, 1988, EPA proposed to revise the HRS, Appendix A to the NCP. The HRS is the model by which releases are assigned a numerical score for use in placing priority releases on the CERCLA NPL.[331] CERCLA § 105(c) had called for revisions by April 17, 1988.

CERCLA "Off-site" Transfer Rule

On November 29, 1988, EPA proposed to add § 300.440 to the NCP setting out requirements for the transfer of wastes from CERCLA sites.[332] The proposed rule would implement the requirements of CERCLA § 121(d)(3) and the "revised off-site policy," which currently provides that wastes from CERCLA-funded or authorized actions may only be transferred to properly permitted off-site facilities that are in compliance with applicable law and do not have uncontrolled releases of hazardous substances.[333] Regulations on this issue were suggested in the Conference Report on SARA, but not by the language of the statute.

Subpart K to the NCP

As discussed above, the Agency intends to propose a new Subpart K to the NCP relating to CERCLA actions at federal facility sites.

Conclusions

The task of revising the rules of operation for the nation's Superfund program has been a formidable one for EPA. The Agency has had to reconcile competing mandates in fulfilling its responsibilities. For instance, the statute calls for the accomplishment of expeditious remedies, yet it requires substantial involvement of the public and the states, detailed administrative records, and a long study and alternatives-assessment process prior to remedy selection. The statute also calls for a maximum use of costly treatment technologies, while at the same time requiring selected remedies to be cost-effective.

By one measure, the NCP is an unqualified success: It contains "something for everyone." States can be expected to be happy with an expanded partnership role throughout the process; PRPs can be happy with the less restrictive private cost recovery standard, and with some more realistic expectations and principles for more streamlined decisionmaking; environmentalists should be heartened by the increased emphasis placed on selecting treatment-oriented remedies under this rule; community groups should be encouraged by the increased opportunities for participation in the process; and the interested public overall should be pleased by efforts to add some structure and predictability to a process that has historically been viewed as wide open.

At the same time, each of these constituencies is likely to be dissatisfied with parts of the final rule (indeed, in some cases precisely the part that pleased some other interest group). Such a reaction would not be unexpected from a process that seeks consensus, and a statute that includes a separate provision for each of several competing constituencies; indeed, such a reaction may be an indication that the Agency has charted a proper middle course.

However, the real measure of the NCP's success, and of the success of the Superfund program more broadly, will be in the implementation — not the words — of the final rule. Implementation is especially critical in this program because so many issues are addressed in guidance, rather than in binding rules. As noted earlier, although detail and structure have been added to the remedy selection process, the NCP remains a highly discretionary document, affording significant flexibility to the site-specific decision-maker. It is too early to tell how consistently those rules and policy statements will be applied.

Whether the new NCP is given a fair test in the field may depend, to a large degree, on Congress. The shadow on the horizon is the up-coming reauthorization of CERCLA. It would be unfortunate if Congress sought too quickly to try to remedy perceived problems before giving the new NCP regulatory framework some time to be understood and put to work. Perhaps the last thing the Superfund needs is another ambitious set of mandates and deadlines, like those in SARA, that would again turn Agency energies to rewriting the rules, rather than applying them in the field.

The final NCP has been long in coming. Only time will tell if it was worth the wait.

1. "Superfund" (the Fund) is the commonly used name for the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), 42 U.S.C. §§ 9601-9675, ELR STAT. CERCLA 001-075. The name stems from the fund established by CERCLA that may be used to directly finance cleanup actions. The Fund was originally established under CERCLA § 221, 42 U.S.C. § 9631 (1982), but was modified in 1986 by SARA § 517, and recodified at § 9507 Chapter 98 of the Internal Revenue Code.

2. 55 Fed. Reg. 8666-8865 (Mar. 8, 1990) (to be codified at 40 C.F.R. § 300).

3. Pub. L. No. 99-499, 100 Stat. 1613 (Oct. 17, 1986). On the 1986 amendments generally, see Atkeson et al., *An Annotated Legislative History of the Superfund Amendments and Reauthorization Act of 1986 (SARA)*, 16 ELR 10360 (Dec. 1986).

4. 53 Fed. Reg. 51394 (Dec. 21, 1988). Virtually every section of the 1985 NCP relating to hazardous site response was revised or reorganized in the proposed NCP revisions, and most of those changes have been finalized in the 1990 revisions.

5. 42 U.S.C. §§ 9601-9675, ELR STAT. CERCLA 001-075.

6. Courageous readers will note that the bulk of the preamble consists of responses to public comment or lengthy discussions of policy issues that are not necessarily included in the rule. This reflects the practice of the Superfund program to give guidance in the preamble to its rulemakings; the Agency believed that most of the responses to comment were important enough to be included in the published package (which can then be easily cited), rather than included in a support document that is available only from the Superfund docket.

7. 42 U.S.C. §§ 6901-6992K, ELR STAT. RCRA 001-050.

8. The term "hazardous substance" is defined in CERCLA § 101(14), 42 U.S.C. § 9601(14), ELR STAT. CERCLA 007, to include any substance listed as hazardous under a number of other environmental statutes, including the Clean Air Act, the Clean Water Act, and RCRA. The term "pollutant or contaminant" is defined in § 101(33), 42 U.S.C. § 9601(33), ELR STAT. CERCLA 009, and generally includes any substance capable of endangering the health of humans or other organisms.

9. 42 U.S.C. § 9604, ELR STAT. CERCLA 012.

10. Although Congress placed the authority for administering CERCLA with the President, most of that authority was delegated to the Administrator of EPA (for nonfederal sites). Exec. Order No. 12580, 52 Fed. Reg. 2923, ELR ADMIN. MATERIALS 45031 (Jan. 29, 1987).

11. 42 U.S.C. § 9606, ELR STAT. CERCLA 024.

12. CERCLA § 101(25), 42 U.S.C. § 9601(25), ELR STAT. CERCLA 009.

13. *Id.* § 101(23), 42 U.S.C. § 9601(23), ELR STAT. CERCLA 008.

14. 55 Fed. Reg. at 8698 (Mar. 8, 1990); 54 Fed. Reg. 13298 (Mar. 31, 1989); 52 Fed. Reg. 27622 (July 22, 1987).

15. CERCLA § 101(24), 42 U.S.C. § 9601(24), ELR STAT. CERCLA 009.

16. *Id.* § 105(a), 42 U.S.C. § 9605(a), ELR STAT. CERCLA 021.

17. *Id.* § 104(d)(1)(A), 42 U.S.C. § 9604(d)(1)(A), ELR STAT. CERCLA 052.

18. NCP § 300.5; 40 C.F.R. § 300.6 (1985). Under the NCP, states cannot be the lead agency for all purposes. For example, only EPA may make the final remedy selection decision for a Fund-financed cleanup. *See* NCP § 300.515(e)(1); note 72 *infra*. For purposes of this Article, references will generally be to "EPA" action under CERCLA, even though in many cases, the state may assume the lead for actions at particular sites.

19. 42 U.S.C. § 9607, ELR STAT. CERCLA 024.

20. *Id.* § 9607(a)(4)(A), ELR STAT. CERCLA 024.

21. CERCLA § 107(a)(4)(B), 42 U.S.C. § 9607(a)(4)(B), ELR STAT. CERCLA 024.

22. *See, e.g.*, O'Neil v. Picillo, 883 F.2d 176, 20 ELR 20115 (1st Cir. 1989); United States v. Chem-Dyne Corp., 572 F. Supp. 802, 13 ELR 20986 (S.D. Ohio 1983).

23. The history and development of the NCP is discussed in detail in Freedman, *Proposed Amendments to the National Contingency Plan: Explanation and Analysis*, 19 ELR 10103 (Mar. 1989).

24. 50 Fed. Reg. 47912 (Nov. 20, 1985).

25. Codified at CERCLA § 105(b), 42 U.S.C. § 9605(b), ELR STAT. CERCLA 022.

26. *Id.* § 121(b), 42 U.S.C. § 9621(b), ELR STAT. CERCLA 051.

27. *Id.* § 121(d)(2), (d)(4), 42 U.S.C. § 9621(d)(2), (d)(4), ELR STAT. CERCLA 052. The statute provides for the waiver of an ARAR under six limited circumstances: (1) where the action is an *interim* measure, and the ARAR will be met upon completion; (2) where compliance with the ARAR would pose a *greater risk* to health and the environment than noncompliance; (3) where it is *technically impracticable* to meet the ARAR; (4) where the standard of performance of an ARAR can be met by an *equivalent method;* (5) where a state standard has *not been consistently applied* elsewhere; and (6) where compliance would not provide a balance between the protection achieved and *demands on the Fund* for other sites.

28. *Id.* § 121(a), (b)(1), 42 U.S.C. § 9621(a),(b)(1), ELR STAT. CERCLA 051.

29. *Id.* § 121(b)(1), 42 U.S.C. § 9621(b)(1), ELR STAT. CERCLA 051.

30. *Id.*

31. *Id.* §§ 117, 113(k), 42 U.S.C. §§ 9617, 9613(k), ELR STAT. CERCLA 042, 040.

32. *Id.* § 121(f), 42 U.S.C. § 9621(f), ELR STAT. CERCLA 053.

33. The requirement to select cost-effective remedies is stated in § 121(a) and (b)(1).

34. CERCLA § 105(b), 42 U.S.C. § 9605(b), ELR STAT. CERCLA 022.

35. Natural Resources Defense Council v. Reilly, No. 88-3199 (D.D.C. consent decree filed June 14, 1989).

36. 53 Fed. Reg. 51394 (Dec. 21, 1988).

37. 55 Fed. Reg. 8666-8865 (Mar. 8, 1990).

38. *Id.* at 8795. CERCLA's administrative record requirements apply to ongoing actions "to the extent practicable." CERCLA § 113(k)(2)(C), 42 U.S.C. § 9613(k)(2)(C), ELR STAT. CERCLA 040; *see also* NCP § 300.800(d),.800(e). This issue is discussed in more detail *infra* at text accompanying notes 307-10.

39. Reilly, *A Management Review of the Superfund Program* (June 1989).

40. 55 Fed. Reg. at 8839 (to be codified at 40 C.F.R. § 300.400-.440). Hereinafter sections of the final rule will be referred to as "NCP § 300. "; finalrule sections from the 1985 NCP will be referred to as "40 C.F.R. § 300. (1985)."

41. NCP § 300.500-.525.

42. NCP § 300.700-.825.

43. NCP § 300.800-.825.

44. CERCLA § 101(14) defines a "hazardous substance" to generally exclude "petroleum, including crude oil or any fraction thereof," as well as natural gas and natural gas liquids. However, where a hazardous substance is intermingled with a petroleum product, or where a petroleum product is specifically listed under one of the statutes in § 101(14), response authority under CERCLA is available. *See* Memorandum from Francis S. Blake, General Counsel, to J. Winston Porter, Assistant Administrator for Solid Waste and Emergency Response, Scope of the CERCLA Petroleum Exclusion Under Sections 101(14) and 104(a)(2) (July 31, 1987).

45. NCP § 300.1-.7.

46. NCP § 300.100-.185. This subpart deals with federal agencies as arms of the executive branch, offering their expertise on matters relevant to releases (e.g., the Nuclear Regulatory Commission with respect to waste containing radioactive elements, or the Fish and Wildlife Service regarding threatened species). This should be distinguished from planned Subpart K, which will set out the responsibilities of federal agencies when taking cleanup actions at their own facilities.

47. NCP § 300.200-.220.

48. NCP § 300.300-.335.

49. NCP § 300.600-.615.

50. NCP § 300.900-.920.

51. CERCLA § 105(d), 42 U.S.C. § 9605(d), ELR STAT. CERCLA 023.

52. NCP § 300.405.

53. NCP § 300.410.

54. NCP § 300.415.

55. Time-critical removal actions commence in fewer than six months after discovery of the release, while non-time-critical removal actions commence after a planning period of more than six months. 53 Fed. Reg. at 51409. Very few CERCLA removal actions fall into the non-time-critical category.

56. NCP § 300.420.

57. 40 C.F.R. pt. 300, app. A.

58. A rulemaking is presently under way to revise the HRS, consistent with CERCLA § 105(c), 42 U.S.C. § 9605(c), ELR STAT. CERCLA 023. *See* 53 Fed. Reg. 51962 (Dec. 23, 1988).

59. 40 C.F.R. pt. 300,app. B.

60. Monies from the Fund may be spent only for remedial actions at those releases listed on the NPL. *See* 40 C.F.R. § 300.66(c)(2), .68(a) (1985); NCP § 300.425(b)(1).

61. NCP § 300.425.

62. *See* NCP § 300.425(b)(1), .425(b)(2); 55 Fed. Reg. 8698 (Mar. 8, 1990); 54 Fed. Reg. 13298 (Mar. 31, 1989); 54 Fed. Reg. 10522 (Mar. 13, 1989).

63. NCP § 300.430(a)(2), .430(d), .430(e).

64. NCP § 300.430(e)(2)(i).

65. 55 Fed. Reg. 8712-13 (Mar. 8, 1990); *see infra* text accompanying notes 164-80.

66. NCP § 300.430(e)(7).

67. NCP § 300.430(e)(9).

68. NCP § 300.430(f).

69. NCP § 300.430(f)(1)(i).

70. CERCLA § 121(b)(1), NCP § 300.430(f)(1)(ii)(D) and (E).

71. NCP § 300.430(f)(1)(ii)(E).

72. If the state is the lead agency but EPA does not agree with the proposed plan, EPA may take back the lead on the project. *See* NCP § 300.515(e)(1).

73. NCP § 300.430(f)(2).

74. NCP § 300.430(f)(5). For a list of all CERCLA RODs, see ELR ADMIN. MATERIALS 30003:3.

75. NCP § 300.435.

76. CERCLA § 117(c), 42 U.S.C. § 9617(c), ELR STAT. CERCLA 043; NCP § 300.435(c)(2)(i).

77. NCP § 300.435(c)(2)(ii). The different circumstances warranting an ESD as compared with a ROD amendment are discussed below at text accompanying notes 284-88.

78. *See* NCP § 300.435(f)(3), and discussion below on state cost share for O&M.

79. CERCLA § 104(c)(3), 42 U.S.C. § 9604(c)(3), ELR STAT. CERCLA 013; NCP § 300.510(c)(1).

80. NCP § 300.425.

81. NCP § 300.430(f)(4)(ii).

82. NCP § 300.5.

83. 40 C.F.R. § 261.31-.33.

84. NCP § 300.400(g)(2)(i)-.400(g)(2)(viii).

85. The Agency has specifically discussed this interpretation with respect to the standards for closure of hazardous waste management units under RCRA. *See* 53 Fed. Reg. 51445-46 (Dec. 21, 1988).

86. CERCLA § 121(d)(4), 42 U.S.C. § 9621(d)(4), ELR STAT. CERCLA 052. There are six limited circumstances under which an ARAR may be waived. *See supra* note 27, and 55 Fed. Reg. 8747-50 (Mar. 8, 1990). Although waivers have been used rarely to date, the Agency is considering their more frequent application in the future. *See, e.g.*, the discussion below in the section "Remedy Selection — Fund Balancing Waiver."

87. NCP § 300.400(g)(4).

88. 55 Fed. Reg. 8756-57 (Mar. 8, 1990). This issue is discussed in more detail below, in the section "ARARs Issues — Substantive, Not Administrative, Requirements."

89. 42 U.S.C. § 9621(d)(2)(A)(i) and (ii), ELR STAT. CERCLA 052.

90. Thus, they will not be considered potentially relevant and appropriate requirements, and they cannot be waived under CERCLA § 121(d)(4), 42 U.S.C. § 9621(d)(4), ELR STAT. CERCLA 052. One advantage of being considered a potential ARAR is that the requirement is on a list that is routinely considered by site managers (*see* 55 Fed. Reg. at 8764-66). Thus, the likelihood of early attention to the requirement is high.

91. 42 U.S.C. § 9621(d)(2)(A), ELR STAT. CERCLA 052.

92. Off-site transfers must also comply with EPA's off-site policy (EPA/OSWER Directive No. 9834.11, Nov. 13, 1987) and CERCLA § 121(d)(3), 42 U.S.C. § 9621(d)(3), ELR STAT. CERCLA 052. A new section of the NCP has been proposed to codify the off-site requirements in that policy and section of the statute. *See* 53 Fed. Reg. 48218 (Nov. 29, 1988).

93. 55 Fed. Reg. 8695-96 (Mar. 21, 1990).

94. 40 C.F.R. § 300.68(i)(1) (1985). Note, however, that under 40 C.F.R. § 300.65(f) and .68(i) (1985), remedies were required to meet the ARARs of federal environmental and public health laws; the statute and the final NCP limit ARARs to environmental laws.

95. NCP § 300.400(g)(4); *see* discussion below in "State ARARs Issues."

96. NCP § 300.415(i); *see also* 40 C.F.R. § 300.65(f) (1985).

97. 53 Fed. Reg. at 51441.

98. MCLs are independently applicable only to public drinking water systems. SDWA § 1401(1), 42 U.S.C. § 300f(1), ELR STAT. SDWA 002; 50 Fed. Reg. 46880 (Nov. 13, 1985). Hence, their use as potential ARARs for contaminated groundwater is based on an analysis that under CERCLA § 121(d)(2)(A)(i), they may be relevant and appropriate requirements in determining groundwater restoration levels. Similarly, MCLGs are not independently applicable (they are unenforceable goals). However, the statute requires the attainment of MCLGs where "relevant and appropriate under the circumstances of the release." CERCLA § 121(d)(2)(A), 42 U.S.C. § 9621(d)(2)(A), ELR STAT. CERCLA 052.

99. *See* NRDC v. EPA, 812 F.2d 721, 723, 17 ELR 20418 (D.C. Cir. 1987); SDWA § 1412, 42 U.S.C. § 300g-1, ELR STAT. SDWA 002; 50 Fed. Reg. 46880-81 (Nov. 13, 1985); 49 Fed. Reg. 2437 (June 12, 1984).

100. 53 Fed. Reg. 51441 (Dec. 21, 1988).

101. 55 Fed. Reg. 8751-52 (Mar. 8, 1990). ARARs are defined as the "promulgated" (i.e., enforceable) requirements of other laws. NCP § 300.400(g)(4). MCLs are the enforceable requirements of the SDWA. 50 Fed. Reg. 46881 (Nov. 13, 1985).

102. NCP § 300.430(e)(2)(i)(B), (C).

103. 55 Fed. Reg. 8751-52 (Mar. 8, 1990).

104. *See* Memorandum of Jonathan Z. Cannon, Acting Assistant Administrator for Solid Waste and Emergency Response, *Considerations in Ground Water Remediation at Superfund Sites*, EPA/OSWER Directive No. 9355.4-03 (Oct. 18, 1989).

105. CERCLA § 121(d)(2)(B)(ii), 42 U.S.C. § 9621(d)(2)(B)(ii), ELR STAT. CERCLA 052.

106. 55 Fed. Reg. 8754 (Mar. 8, 1990).

107. CERCLA § 121(d)(2)(B)(i), 42 U.S.C. § 9621(d)(2)(B)(i), ELR STAT. CERCLA 052.

108. 55 Fed. Reg. 8754-55 (Mar. 8, 1990).

109. 53 Fed. Reg. 51440 (Dec. 21, 1988).

110. NCP § 300.430(f)(1)(ii)(B); 55 Fed. Reg. 8757 (Mar. 8, 1990).

111. *See* S. REP. NO. 848, 96th Cong., 2d Sess. 56 (1980), *reprinted in* 1 SENATE COMM. ON ENVIRONMENT & PUBLIC WORKS, 97th Cong. 2d Sess., *A Legislative History of the Comprehensive Environmental Response, Compensation and Liability Act of 1980*, at 363 (Comm. Print 1983):

The paramount purpose of this section [104] is the protection of public health, welfare and the environment. It is recognized that government response will often be necessary prior to receipt of evidence which conclusively establishes the substances or materials released or the origin of their release, discharge or disposal. Because delay will often exacerbate an already serious situation, the bill authorizes the President to respond when a substantial threat of release

may exist.

Courts have also recognized the congressional intent to promote the "prompt cleanup of hazardous waste sites." Dickerson v. EPA, 834 F.2d 974, 978, 18 ELR 20305, 20306 (11th Cir. 1987); J. V. Peters & Co. v. EPA, 767 F.2d 263, 264, 15 ELR 20646 (6th Cir. 1985).

112. CERCLA § 121(c), 42 U.S.C. § 9621(c), ELR STAT. CERCLA 051; 40 C.F.R. § 300.430(f)(4)(ii); 53 Fed. Reg. 51430, 51507 (Dec. 21, 1988).

113. NCP § 300.430(f)(1)(ii)(B)(2).

114. *See* 53 Fed. Reg. 51443-47 (Dec. 21, 1988); 55 Fed. Reg. 8759-62 (Mar. 8, 1990).

115. 42 U.S.C. § 6924, ELR STAT. RCRA 012.

116. Pub. L. No. 98-616, 88 Stat. 3221.

117. 42 U.S.C. § 6924(k), ELR STAT. RCRA 013.

118. *See, e.g.*, 53 Fed. Reg. 31138 (Aug. 17, 1988) (standards for first-third wastes issued); 54 Fed. Reg. 26594 (June 23, 1989) (standards for second-third wastes issued); 54 Fed. Reg. 48372 (Nov. 11, 1989) (standards for third-third wastes proposed).

119. *See, e.g.*, RCRA § 3004(d)(3), which provides that for four years after the effective date of the HSWA, the restrictions in subsection (d) would not apply to "any disposal of contaminated soil or debris resulting from a response action taken under § 104 or 106 of [CERCLA] or a corrective action under this title." 42 U.S.C. § 6924(d)(3), ELR STAT. RCRA 013.

120. 53 Fed. Reg. 51444 (Dec. 21, 1988). However, movement of hazardous waste entirely within a unit would not constitute placement or "land disposal" under RCRA Subtitle C. *Id.*

121. 54 Fed. Reg. 41566 (Oct. 10, 1989).

122. 55 Fed. Reg. 8759-60 (Mar. 8, 1990).

123. *Id.* at 8760-61. Variances from BDAT are available under RCRA where the treatment technology is deemed not to be "appropriate" to the waste. 40 C.F.R. § 268.44.

124. *See* CERCLA § 121(e)(1), (d)(2); discussion at 53 Fed. Reg. 51443 (Dec. 21, 1988).

125. 55 Fed. Reg. 8762 (Mar. 8, 1990). EPA has issued detailed guidance on treatability variance levels for specific types of contaminants. *See* Superfund LDR Guidance No. 6A, *Obtaining a Soil and Debris Treatability Variance for Remedial Actions*, EPA/OSWER Directive No. 9347.3-06FS (July 1989).

126. 55 Fed. Reg. 8762 (Mar. 8, 1990).

127. 53 Fed. Reg. 51426 (Dec. 21, 1988).

128. 55 Fed. Reg. 8753 (Mar. 8, 1990).

129. *Id.* at 8734.

130. CERCLA § 121(b), 42 U.S.C. § 9621(b), ELR STAT. CERCLA 051. CERCLA also appears to contemplate the restoration of groundwater. CERCLA § 104(c)(6), 42 U.S.C. § 9604(c)(6), ELR STAT. CERCLA 013.

131. *See, e.g.*, proposed § 300.430(b)(7), 53 Fed. Reg. 51504 (Dec. 21, 1988).

132. *See, e.g.*, NCP § 300.400(g)(3), .415(i), .430(b)(9); 55 Fed. Reg. 8744-45 (Mar. 8, 1990).

133. *See* discussion in the preamble to the proposed rule at 53 Fed. Reg. 51443 (Dec. 21, 1988), and in *CERCLA Compliance With Other Laws Manual*, EPA/OSWER Directive No. 9234.1-01, at p. 1-11 (Interim Final Guidance, Aug. 8, 1988).

134. NCP § 300.5; 55 Fed. Reg. 8756 (Mar. 8, 1990).

135. *See supra* note 111. In addition to enacting an express permit waiver in CERCLA § 121(e)(1), discussed below, Congress recognized the need to allow cleanups to move forward without delay by enacting § 113(h), which delays judicial review of CERCLA response actions until EPA takes an enforcement or cost recovery action, until the action has been completed, or until an action has been filed under CERCLA § 106(b).

136. *See* 50 Fed. Reg. 47910-18 (Nov. 20, 1985); 50 Fed. Reg. 5865 (Feb. 12, 1985); Memorandum of Francis S. Blake, General Counsel, to Lee M. Thomas, Administrator, "CERCLA Compliance With Other Environmental Laws" Opinion (Nov. 22, 1985). The implied repeal theory is based in large part on the existence of the ARARs process under CERCLA § 121(d)(2) and (d)(4), which defines how and to what extent the requirements of federal and state environmental laws should apply to on-site CERCLA remedial actions. Based on these provisions, CERCLA remedies will incorporate (or waive) the standards of other environmental laws, as appropriate under CERCLA. Thus, although other environmental laws do not independently apply to CERCLA response actions, the substantive requirements of such laws will be applied to such actions, consistent with CERCLA § 121(d) and NCP § 300.400(g).

137. *See, e.g., CERCLA Compliance With Other Laws Manual: Part II*, EPA/OSWER Directive No. 9234.1-02, at p. 4-1 (Interim Final Guidance, Aug. 1989):

While EPA interprets CERCLA § 121(e) to exempt lead agencies . . . from complying with the administrative requirements for on-site remedial activities, it is strongly recommended that lead agencies, nonetheless, consult as specified with administering agencies for on-site actions. The administering agencies have the expertise to determine the impacts of a remedial action on particular aspects of the environment and what steps should be taken to avoid and mitigate adverse impacts.

138. NCP § 300.435(b)(2).

139. CERCLA § 121(d)(2)(A), 42 U.S.C. § 9621(d)(2)(A), ELR STAT. CERCLA 052.

140. 55 Fed. Reg. 8755 (Mar. 8, 1990).

141. *Id.* at 8695.

142. CERCLA §§ 101(23), 104(b); 42 U.S.C. §§ 9601(23), 9604(b); ELR STAT. CERCLA 052.

143. 16 U.S.C. §§ 1531-1544, ELR STAT. ESA 001-027.

144. *Id.* §§ 470-470w-6.

145. *See* EPA/OSWER Directive No. 9234.1-02,*supra* note 137, at ch. 4.

146. 55 Fed. Reg. 8755 (Mar. 8, 1990).

147. CERCLA § 121(d)(4)(A), 42 U.S.C. § 9621(d)(4)(A), ELR STAT. CERCLA 052; NCP § 300.430(f)(1)(ii)(C)*(1).*

148. 40 C.F.R. § 300.65(f) (1985).

149. *See* CERCLA § 121(d)(2), 42 U.S.C. § 9621(d)(2), ELR STAT. CERCLA 052.

150. NCP § 300.415(i).

151. 55 Fed. Reg. 8695-96 (Mar. 8, 1990).

152. NCP § 300.415(i).

153. NCP § 300.415(i)(A) and (B).

154. "Removal" actions are defined in CERCLA § 101(23) as actions to "prevent, minimize or mitigate damage" or to conduct investigations, whereas "remedial" actions are defined in CERCLA § 101(24) as actions consistent with a "permanent" remedy at the site. Further, CERCLA § 104(c)(1) provides that Fund-financed removal actions may not continue after $ 2 million have been obligated or 12 months have elapsed, except under limited circumstances spelled out in that section. Both sections of the statute suggest that removals are generally intended to be short-term, nonpermanent actions. (Although in some cases, a removal action may result in a permanent solution to a contamination problem.)

155. For instance, as discussed below, there are additional public participation requirements associated with remedial actions.

156. CERCLA § 121(d)(4), 42 U.S.C. § 9621(d)(4), ELR STAT. CERCLA 052; NCP § 300.430(f)(1)(ii)(C).

157. 55 Fed. Reg. 8695; 8747 (Mar. 8, 1990).

158. CERCLA § 121(d)(2)(A)(ii), 42 U.S.C. § 9621(d)(2)(A)(ii), ELR STAT. CERCLA 052; NCP § 300.400(g)(4). (Note that "promulgated" is defined in the rule as being "of general applicability and legally enforceable." *Id.*) Under the 1985 NCP, state requirements were merely considered TBCs. 40 C.F.R. § 300.68(i)(4) (1985).

159. 55 Fed. Reg. 8741-42 (Mar. 8, 1990).

160. *Id.* at 8746; *see* NCP § 300.400(g)(5).

161. NCP § 300.515(d)(1).

162. *See* discussion at 53 Fed. Reg. 51438 (Dec. 21, 1988); 55 Fed. Reg. 8746 (Mar. 8, 1990).

163. CERCLA § 121(d)(4)(A), 42 U.S.C. § 9621(d)(4)(A), ELR STAT. CERCLA 052; NCP § 300.430(f)(1)(ii)(C)(*1*).

164. NCP § 300.430(d)(1).

165. 55 Fed. Reg. 8709 (Mar. 8, 1990). The baseline risk assessment consists of an exposure assessment component and a toxicity assessment component. It has superseded the "endangerment assessment," because the two have the same goal, function, and methodology. *Id.*

166. *Id.* at 8713.

167. NCP § 300.430(e)(2)(i), .430(e)(2)(i)(A)(2); 55 Fed. Reg. 8713 (Mar. 8, 1990).

168. 55 Fed. Reg. 8712 (Mar. 8, 1990).

169. This is in deference to the determination of another environmental protection program that the ARAR level is protective. (Cleanup to a level more stringent than the single ARAR might be appropriate to assure protectiveness where the Agency finds, for example, on a site-specific basis, that the contaminant poses a risk over more than one pathway of exposure. *Id.* at 8713.)

170. *Id.*

171. *Id.* at 8712-13. These levels are set based on reliable toxicity information, such as EPA's reference doses.

172. *Id.* at 8712.

173. NCP § 300.430(d)(4); 55 Fed. Reg. 8709-11 (Mar. 8, 1990). In effect, cleanups will be based on "likely" residential, industrial, or other uses. The Superfund program is in the process of developing generic exposure assumptions for such use categories.

174. 55 Fed. Reg. 8713 (Mar. 8, 1990).

175. *Id.*

176. 53 Fed. Reg. 51425-26 (Dec. 21, 1988).

177. Exposure factors, uncertainty factors, and technical factors may determine where to set remedial action goals within the risk range. *See* 55 Fed. Reg. 51426 (Mar. 8, 1990).

178. NCP § 300.430(e)(2)(i)(A)(*2*).

179. 55 Fed. Reg. 8716-17 (Mar. 8, 1990).

180. *See, e.g. id.* at 8717 n.9.

181. NCP § 300.420(f)(1)(i)(A)-(C); 55 Fed. Reg. 8724 (Mar. 8, 1990).

182. The analysis of compliance with ARARs does not necessarily resolve the issue of how stringent the remedy must be. As discussed below in the section on the "role of cost," where chemical-specific ARARs are not available to define the protective cleanup level for the relevant contaminants, the Agency will select among the alternative technologies that will result in remedies within the acceptable risk range; the balancing criteria aid in selecting among such viable, protective alternatives.

183. *See* 53 Fed. Reg. 51428-29 (Dec. 21, 1988).

184. NCP § 300.430(f)(1)(ii)(E).

185. 55 Fed. Reg. 8725 (Mar. 8, 1990).

186. NCP§ 300.430(a)(1)(i).

187. NCP § 300.430(f)(1)(iii)(A).

188. 55 Fed. Reg. 8721 (Mar. 8, 1990).

189. NCP §§ 300.430(f)(1)(ii)(E).

190. NCP § 300.430(a)(1)(iii)(E).

191. *See* 53 Fed. Reg. 51422 (Dec. 21, 1988).

192. NCP § 300.430(a)(1)(iii).

193. 55 Fed. Reg. 8702-03 (Mar. 8, 1990).

194. NCP § 300.430(f)(1)(iii)(A). "Principal threats" include liquids as well as highly toxic or highly mobile contamination.

195. NCP § 300.430(f)(1)(iii)(B).

196. NCP § 300.430(a)(1)(iii)(C). The rule also sets out expectations concerning the development of innovative technologies; the use of institutional controls, primarily a supplement to more active measures; and the restoration of groundwater to its beneficial uses, wherever practicable. NCP § 300.430(a)(1)(iii)(D)-(F).

197. NCP § 300.430(a)(1)(ii); 55 Fed. Reg. 8703 (Mar. 8, 1990).

198. NCP § 30.430(a)(1)(ii)(A).

199. *See, e.g.*, Memorandum from Don R. Clay, Assistant Administrator for Solid Waste and Emergency Response, *Interim Guidance on Addressing Immediate Threats at NPL Sites* (Superfund Management Review: Recommendation No. 22), EPA/OSWER Directive No. 9200.2-03 (Jan. 30, 1990).

200. NCP § 30.430(a)(1)(ii)(C).

201. 55 Fed. Reg. 8712, 8714 (Mar. 8, 1990).

202. 53 Fed. Reg. 51440 (Dec. 21, 1988).

203. CERCLA § 121(d)(4)(f); NCP § 300.430(f)(1)(ii)(C)(*6*).

204. The Fund-balancing waiver has been invoked in only one case and considered in another. *See* Freedman, *supra* note 23, at 10132 n.261.

205. 55 Fed. Reg. 8749-50 (Mar. 8, 1990).

206. *See, e.g.*, Senate Subcomm. on Superfund, Ocean, and Water Protection, *Lautenberg-Durenberger Report on Superfund Implementation: Cleaning Up the Nation's Cleanup Program*, 57-64 (May 1989).

207. 55 Fed. Reg. 8726-30 (Mar. 8, 1990).

208. *See* discussion above in "Risk Assessment and Risk Range."

209. NCP § 300.430(f)(1)(ii)(D); 55 Fed. Reg. 8728 (Mar. 8, 1990).

210. 55 Fed. Reg. 8728 (Mar. 8, 1990); *see also* 53 Fed. Reg. 51422 (Dec. 21, 1988).

211. 55 Fed. Reg. 8728 (Mar. 8, 1990); 53 Fed. Reg. 51427-28 (Dec. 21, 1988).

212. Alternatives with grossly excessive costs will be eliminated during screening, as discussed below.

213. 55 Fed. Reg. 8728 (Mar. 8, 1990). This decision not to use cost as a major factor in eliminating "viable" options prior to balancing is not necessarily inconsistent with the Agency's use of cost during screening, discussed below, to eliminate extreme (nonviable) options with "grossly" excessive cost.

214. CERCLA § 121(b)(1), 42 U.S.C. § 9621(b)(1), ELR STAT. CERCLA 052.

215. NCP § 300.430(f)(1)(ii)(e); 55 Fed. Reg. 8729 (Mar. 8, 1990).

216. The "permanence" offered by a remedy is an important element of this determination. The preamble to the final NCP notes that the maximum permanence practicable is judged along a continuum, based on the degree of long-term effectiveness and permanence afforded by a remedy. 55 Fed. Reg. 8720 (Mar. 8, 1990).

217. *Id.* at 8725.

218. *Id.*

219. *Id.* at 8729.

220. NCP § 300.430(e)(7)(iii); 55 Fed. Reg. 8714-15 (Mar. 8, 1990).

221. Cost may also be used to screen out an alternative that uses a similar technology and provides similar effectiveness and implementability to another alternative, but at a greater cost. In effect, this avoids the need to carry variations of the same technology through the detailed analysis phase.

222. CERCLA § 121(e)(1), 42 U.S.C. § 9621(e)(1), ELR STAT. CERCLA 053.

223. CERCLA § 121(d)(2)(A), 42 U.S.C. § 9621(d)(2)(A), ELR STAT. CERCLA 052 ("With respect to any hazardous substance, pollutant or contaminant that will remain onsite . . .").

224. 53 Fed. Reg. 51406-08 (Dec. 21, 1988); *see also* discussion in Freedman, *supra* note 23, at 10125-26.

225. NCP § 300.400(e).

226. 55 Fed. Reg. 8688-89 (Mar. 8, 1990). This definition of "on-site" in the NCP is also significant in that it defines, by extension, the term "off-site," and thus affects the scope of CERCLA policy on the transfer of CERCLA wastes off site. Currently, such transfers are regulated under the revised off-site policy, EPA/OSWER Directive No. 9834.11 (Nov. 13, 1987), and CERCLA § 121(d)(3), which provide generally that wastes from CERCLA-funded or authorized actions may only be transferred to properly permitted off-site facilities that are in compliance with applicable law, and do not have uncontrolled releases of hazardous substances. Regulations to implement the off-site policy and § 121(d)(3) have been proposed (53 Fed. Reg. 48219 (Nov. 29, 1988)).

227. As noted in CERCLA § 104(d)(4), "where two or more noncontiguous facilities are reasonably related on the basis of geography, or on the basis of the threat, or potential threat to the public health or welfare or the environment, the President may, in his discretion, treat these related facilities as one for the purposes of this section." 42 U.S.C. § 9604(d)(4), ELR STAT. CERCLA 015.

228. 55 Fed. Reg. 8690 (Mar. 8, 1990).

229. As a matter of policy, and as part of the hazard ranking system process for site evaluation, EPA applies more restrictive criteria to potential site aggregations at the NPL listing stage than it does at the remedial response stage. *See* 48 Fed. Reg. 40663 (Sept. 8, 1983).

230. 55 Fed. Reg. 8691 (Mar. 8, 1990).

231. *See, e.g.*, 53 Fed. Reg. 51416 (Dec. 21, 1988) (proposed NCP); 53 Fed. Reg. 23978 (June 24, 1988); 48 Fed. Reg. 40658 (Sept. 8, 1983).

232. 55 Fed. Reg. 8667 (Dec. 21, 1988).

233. A recent report by GAO on the capability of State response programs revealed disparities in the abilities of states to clean up sites, but recognized that many states have well-developed response programs. *See* GAO REP. NO. GAO/RCED-89-164, HAZARDOUS WASTE SITES: STATE CLEANUP STATUS AND ITS IMPLICATIONS FOR FEDERAL POLICY (Aug. 1989).

234. NCP § 300.515(e)(1).

235. NCP § 300.515(e)(2)(i); 55 Fed. Reg. 8782 (Mar. 8, 1990).

236. NCP § 300.515(e)(2)(i).

237. 55 Fed. Reg. 8781-82 (Mar. 8, 1990).

238. NCP § 300.515(e)(2)(ii).

239. However, there are limitations on the ability of a state to take independent actions. If EPA undertakes (or has already begun) an RI/FS at a site, CERCLA § 122(e)(6) would not allow a PRP to take remedial action at the site without the prior authorization of EPA, and on its face, that section would also appear to proscribe PRP remedial actions ordered by a state. Further, where EPA does not concur on a state remedy, EPA will not be deemed to have approved the state decision, resulting in less certainty for the PRPs. NCP § 300.515(e)(2)(ii). A state may also be limited in its ability to carry out an independent state-ordered action if that action physically conflicts with an action ordered by EPA, under general principles of federal supremacy.

240. 55 Fed. Reg. 8783 (Mar. 8, 1990). Several commenters suggested that CERCLA § 104(d)(1) may be read in

conjunction with CERCLA § 104(c)(4) (relating to the selection of remedial actions) to allow EPA to authorize states to select remedies at specific sites through cooperative agreements or Superfund contracts.

241. During the original passage of CERCLA in 1980, Congress rejected the idea of establishing a program of federal grants to states as the means of cleaning up hazardous waste sites. *See* Freedman, *supra* note 23, at 10134 & n.274.

242. NCP § 300.515(f); 55 Fed. Reg. 8783-85 (Mar. 8, 1990).

243. As noted above, where EPA and the state disagree on a remedy selection, a state has the option of withholding its CERCLA § 104 assurances,thereby preventing the remedy from proceeding as a Fund-financed action (although EPA could initiate an enforcement action), and for EPA enforcement actions, a process is available for states to challenge a decision by EPA to waive an ARAR (CERCLA § 121(f)(2)(B)). These are, however, extreme measures, and the Agency's goal is to reach agreement with states through the normal remedy selection process. The final rule specifically sets out a procedure for dispute resolution with the states in order to foster agreement on ARARs. NCP § 300.515(d)(3), .515(d)(4); 55 Fed. Reg. 8781-82 (Mar. 8, 1990).

244. These proposed "changes" could include the attainment of a particular state standard that EPA found not to be an ARAR, or waived.

245. As noted above, a state's ability to proceed unilaterally where EPA is undertaking a CERCLA response action may be limited. *See supra* note 239.

246. Proposed NCP § 300.515(a)(3), 53 Fed. Reg. 51511 (Dec 21, 1988).

247. *E.g.*, NCP § 300.505(d)(4); *see* 55 Fed. Reg. 8776-77 (Mar. 8, 1990).

248. The exception to this formula is where the State operated the site, at the time of disposal, in which case the state's cost share may be 50 percent or greater. CERCLA § 104(c)(3)(C)(ii), 42 U.S.C. § 9604(c)(3)(C)(ii), ELR STAT. CERCLA 013.

249. NCP § 300.510(c)(1).

250. CERCLA § 104(c)(3), 42 U.S.C. § 9604(c)(3), ELR STAT. CERCLA 013; 55 Fed. Reg. 8778 (Mar. 8, 1990).

251. NCP § 300.435(f)(4).

252. 55 Fed. Reg. 8737 (Mar. 8, 1990).

253. S. REP. NO. 11, 99th Cong., 1st Sess. 20-21 (1985); S. REP. NO. 631, 98th Cong., 2d Sess. (1984); *see* discussion at 55 Fed. Reg. 8737 (Mar. 8, 1990).

254. NCP § 300.435(f)(3)(ii).

255. 55 Fed. Reg. 8738-39 (Mar. 8, 1990).

256. *Id.* at 8800. Of course, even after the remedy is selected, certain types of documents may still be added to the record, as discussed below.

257. *Id.*

258. NCP § 300.815(a).

259. NCP § 300.820(a)(1).

260. NCP § 300.800(b)(1).

261. NCP § 300.805(a). However, certain classes of documents need not be located at or near the site (e.g., general guidance documents, published references, chain of custody forms). *See* NCP § 300.805(a)(1)-.805(a)(6).

262. NCP § 300.800(a).

263. NCP § 300.810(a)(1)-.810(a)(5); 55 Fed. Reg. 8800-01 (Mar. 8, 1990).

264. NCP § 300.810(b); 55 Fed. Reg. 8801, 8805 (Mar. 8, 1990).

265. NCP § 300.800(c) and (d).

266. 55 Fed. Reg. at 8800.

267. *Id.* at 8802.

268. *Id.* at 8800.

269. *Id.* at 8805.

270. NCP § 300.825(a) and (c); 55 Fed. Reg. 8807-08 (Mar. 8, 1990).

271. NCP § 300.825(b).

272. 40 C.F.R. § 300.67 (1985).

273. 55 Fed. Reg. 8766-67 (Mar. 8, 1990).

274. NCP § 300.415(m).

275. The distinctions between these types of removal actions are discussed above at *supra* note 55. *See also* 53 Fed. Reg. 51409 (Dec. 21, 1988).

276. 55 Fed. Reg. 8767 (Mar. 8, 1990).

277. NCP § 300.415(m)(4)(iii).

278. NCP § 300.430(c)(2)(iv); 55 Fed. Reg. 8769 (Mar. 8, 1990). *See generally* CERCLA § 117(e), 42 U.S.C. § 9617(e), ELR STAT. CERCLA 043; 54 Fed. Reg. 49848 (Dec. 1, 1989); 53 Fed. Reg. 9736 (Mar. 24, 1988).

279. NCP § 300.430(c).

280. NCP § 300.430(f)(3).

281. NCP §§ 300.430(f)(3)(i)(C); 55 Fed. Reg. 8770 (Mar. 8, 1990).

282. NCP § 300.820(b)(2).

If EPAdecides to adopt a final ROD that differs significantly from the proposed plan and those changes could not have been reasonably anticipated based on existing information, additional comment will be solicited on a revised proposed plan.[283]

283. NCP § 300.430(f)(3)(ii)(B).

284. NCP § 300.435(c)(1).

285. NCP § 300.435(c)(2)(ii).

286. NCP § 300.435(c)(2)(i). Both the preamble to the final rule and the preamble to the proposed rule discuss when an ESD, as compared with a ROD amendment, would be appropriate. *See* 55 Fed. Reg. 8772-73 (Mar. 8, 1990); 53 Fed. Reg. 51451-52 (Dec. 21, 1988); *see also Interim Final Guidance on preparing Superfund Decision Documents,* EPA/OSWER Directive No. 9355.3-02 (May 1989).

287. NCP § 300.825(b).

288. NCP § 300.825(c); 55 Fed. Reg. 8773 (Mar. 8, 1990).

289. The issue of whether a local government comes within CERCLA § 107(a)(4)(A) or (B) was not decided by the NCP, but rather was left to the courts. *See 55* Fed. Reg. 8799 (Mar. 8, 1990).

290. District courts have issued interpretations at both ends of the spectrum on this issue. *Compare* General Elec. Co. v. Litton Bus. Sys., 715 F. Supp. 949, 962, 19 ELR 21433, 21438 (W.D. Mo. 1989) (holding that consistency with the NCP "does not necessitate strict compliance with its provisions") *and* Amland Properties Corp. v. Aluminum Co. of Am., 711 F. Supp. 784, 796, 19 ELR 21180, 21184 (D.N.J. 1989) (rejecting arguments that "substantial compliance" with the NCP is sufficient). The split in the courts on this issue was also discussed in the preamble to the proposed rule; 53 Fed. Reg. 51462 (Dec. 21, 1988).

291. NCP § 300.700.

292. 53 Fed. Reg. 51461 (Dec. 21, 1988).

293. NCP § 300.700(c)(3).

294. NCP § 300.700(c)(4).

295. NCP § 300.700(c)(5)-.700(c)(7).

296. 55 Fed. Reg. 8792-93 (Mar. 8, 1990).

297. There are a number of NCP requirements that do not make sense for private parties, such as the requirements for state assurances (§ 300.510), or other provisions related to use of the Fund. Similarly, there are self-imposed restrictions on governmental actions that are not relevant to private actions, such as the requirement that a site be listed on the NPL before Fund-financed remedial action may be taken (300.425(b)(1)).

298. 55 Fed. Reg. 8793 (Mar. 8, 1990). Note that compliance with these mandates was already necessary under the proposed rule, which required private parties to strictly comply with the detailed provisions of the NCP, including provisions codifying these statutory mandates. *See* proposed rule § 300.430(f)(3)(ii) (protectiveness and ARARs); .430(f)(3)(iii) (cost-effectiveness and permanence/treatment); and .430(f)(2) (public participation).

299. 55 Fed. Reg. 8794 (Mar. 8, 1990).

300. *See id.* at 8785-86.

301. NCP § 300.515(e)(2)(i) and (ii). However, the rule maintains the Agency's long-standing position that EPA silence on a state-conducted remedy cannot be construed as EPA concurrence. 55 Fed. Reg. 8786 (Mar. 8, 1990); 53 Fed. Reg. 51458 (Dec. 21, 1988).

302. NCP § 300.520.

303. NCP § 300.515(d)(3)-.515(d)(4); 55 Fed. Reg. 8781-82 (Mar. 8, 1990).

304. 42 U.S.C. § 9622(e)(6); ELR STAT. CERCLA 052; *see* 55 Fed. Reg. 8783 (Mar. 8, 1990); 54 Fed. Reg. at 10523-24 (Mar. 13, 1989).

305. 55 Fed. Reg. 8688 (Mar. 8, 1990). The rule states that a PRP may be designated as EPA's representative for the purpose of access only where that PRP has agreed to conduct response activities pursuant to an administrative order or consent decree. NCP § 300.400(d)(3).

306. 42 U.S.C. § 9604(a)(1); ELR STAT. CERCLA 052; *see* 55 Fed. Reg. 8688 (Mar. 8, 1990). CERCLA § 104(a)(1) sets out certain preconditions before a PRP may conduct an RI/FS. The PRP must show that it will carry out the work

promptly and properly, and it must agree to reimburse the Fund for any oversight costs.

307. 55 Fed. Reg. 8795 (Mar. 8, 1990).

308. CERCLA § 113(k)(2)(C), 42 U.S.C. § 9613(k)(2)(C), ELR STAT. CERCLA 052; NCP § 300.800(d), (e).

309. NCP § 300.430(f)(1)(ii)(B).

310. 55 Fed. Reg. 8795 (Mar. 8, 1990).

311. NCP § 300.425(d)(6); 55 Fed. Reg. 8699-8700 (Mar. 8, 1990).

312. 55 Fed. Reg. 8699-8700 (Mar. 8, 1990).

313. *See* Memorandum of Jonathan Z. Cannon, Acting Assistant Administrator for Solid Waste and Emergency Response, Performance of Five-Year Reviews and Their Relationship to the Deletion of Sites From the National Priorities List (NPL) (Superfund Management Review: Recommendation No. 2) (Oct. 30, 1989); Memorandum from Henry L. Longest II, Director, Office of Emergency and Remedial Response, Update to "Procedures for Completion and Deletion of National Priorities List Sites" — Guidance Document Regarding the Performance of Five-Year Reviews (Superfund Management Review: Recommendation No. 2), EPA/OSWER Directive No. 9320.2-3B (Dec. 29, 1989).

314. Reilly, *supra* note 39, at 7, 1-11.

315. 40 C.F.R. § 300.66(c)(7) (1985); NCP § 300.425(e).

316. CERCLA § 121(c), 42 U.S.C. § 9621(c), ELR STAT. CERCLA 051.

317. *See, e.g.*, CERCLA §§ 105(e), 121(c), 42 U.S.C. §§ 9605(e), 9621(c), ELR STAT. CERCLA 023, 051; 40 C.F.R. § 300.66(c)(8) (1985); NCP § 300.425(e)(3).

318. However, under at least one of the deferral options, all cleanups would have to have been of "CERCLA-quality." 53 Fed. Reg. 51417-18, 51419 (Dec. 21, 1988).

319. 55 Fed. Reg. 8667 (Mar. 8, 1990).

320. Where a federal agency sent wastes to a facility for treatment, storage, or disposal, the agency also may be identified as a PRP under CERCLA.

321. CERCLA § 120(a)(2), 42 U.S.C. § 9620(a)(2), ELR STAT. CERCLA 048. Federal facility cleanups may not be financed by the Fund. *See* CERCLA § 111(e)(3); Exec. Order No. 12580, § 9(i), 52 Fed. Reg. 2923, ELR ADMIN. MATERIALS 45031 (Jan. 29, 1987).

322. NCP § 300.430(f)(4)(iii), 52 Fed. Reg. 2923 (Jan. 29, 1987), ELR ADMIN. MATERIALS 45031.

323. *See* Exec. Order No. 12580, § 2(d)-(e), 52 Fed. Reg. 2923 (Jan. 29, 1987), ELR ADMIN. MATERIALS 45031.

324. CERCLA § 120(a)(4) provides: "State laws concerning removal and remedial action, including State laws regarding enforcement, shall apply to removal and remedial action at facilities owned and operated by a department, agency, or instrumentality of the United States when such facilities are not included on the National Priorities List." 42 U.S.C. § 9620(a)(4), ELR STAT. CERCLA 048.

325. NCP § 300.600.

326. NCP § 300.615(c)-(e).

327. CERCLA § 104(b)(2), 42 U.S.C. § 9604(b)(2), ELR STAT. CERCLA 013; NCP § 300.615(c)(2), (d)(2), (d)(3), (e).

328. NCP § 300.175.

329. NCP § 300.105(c)(1), .110.

330. NCP § 300.105(c)(2), .115.

331. 53 Fed. Reg. 51962 (Dec. 23, 1988).

332. 53 Fed. Reg. 48218 (Dec. 21, 1988).

333. The revised off-site policy appears in EPA/OSWER Directive No. 9834.11 (Nov. 13, 1987).

Appendix O-SM
Comment Letter O-SM Appendix

EXHIBIT 1

From:	Franke, Paul <Paul.Franke@ucsf.edu>
Sent:	Thursday, August 20, 2020 5:27:10 PM
To:	Goodman, Daniel <DanielM.Goodman@ucsf.edu>
Cc:	Whitney, Fred <Fred.Whitney@ucsf.edu>;Wong, Diane C. <Diane.Wong@ucsf.edu>;Beauchamp, Kevin <Kevin.Beauchamp@ucsf.edu>
Subject:	RE: 995 GHG requirements

Have we completed a similar analysis for the new hospital?

Yes. It is a chapter in the draft EIR. Specifically the Climate Action Plan Appendix. (Pages 1483 to 1548 https://ucsf.app.box.com/v/CPHP-Draft-EIR)

We analyzed the cost of meeting the greenhouse gas on the entire CPHP project – including NHPH - for both engineering design features into the project and also for buying requisite offsets. The most cost effective path for meeting the requirements of SB 995 will involve some of both some design features and offsets We thoroughly vetted our strategy with the Office of General Counsel at UCOP.

We currently buy offsets. We have a UCSF committee on purchasing future offsets. Purchase of offsets currently comes out of operational funds. The source of future expenditures of funds for project associated offsets not caused by utility usage is still under discussion. We plan to have a recommendation to management in 2021. The soonest that purchase would start is in 2024.

Jackie's figures assume $9/ton. We assume $11 NPV to be conservative. We have actually paid as low as $6. We look at the technology and the cost curves annually.

Paul Franke,
Principal Planner

Campus Planning
UCSF Real Estate
654 Minnesota Street | San Francisco, CA 94143
tel: 415.514.9209
paul.franke@ucsf.edu

UCSF

ucsf.edu | realestate.ucsf.edu

From: Wong, Diane C. <Diane.Wong@ucsf.edu>
Sent: Thursday, August 20, 2020 11:22 AM
To: Franke, Paul <Paul.Franke@ucsf.edu>
Subject: RE: 995 GHG requirements

Do you mean to include this on our CEQA/LRDP meeting today? Sure, though this could be a lengthy discussion. We can start the conversation and maybe key people can stay if we run overtime?

Diane

From: Franke, Paul <Paul.Franke@ucsf.edu>

Sent: Thursday, August 20, 2020 9:05 AM
To: Wong, Diane C. <Diane.Wong@ucsf.edu>
Subject: FW: 995 GHG requirements
Importance: High

Hi Diane,

See below. For discussion later today?

Paul

From: Goodman, Daniel <DanielM.Goodman@ucsf.edu>
Sent: Thursday, August 20, 2020 8:59 AM
To: Franke, Paul <Paul.Franke@ucsf.edu>; Rob Best <Rob.Best@arup.com>
Subject: RE: 995 GHG requirements

Just resending to include Rob in the conversation. Paul and Rob – if it works for you two to have a conversation without me that's OK.

Dan Goodman
Project Manager

Health Major Capital Projects
Integrated Center for Design & Construction (ICDC)
UCSF Real Estate
601 16th Street | San Francisco, CA 94158
tel: 415.290.9935
danielm.goodman@ucsf.edu

UCSF Health

From: Goodman, Daniel
Sent: Thursday, August 20, 2020 8:44 AM
To: Franke, Paul <Paul.Franke@ucsf.edu>
Subject: FW: 995 GHG requirements

Paul,

See below – it's a long email string, but the portion pertaining to you is right on top.

We are going to set up a meeting on Monday from 2-3, but I see that you have a conflict. Is there any way that you could provide some input before Monday? Sorry for the short notice – this came from Brian Newman via our donor, so there is a level of urgency to respond.

Thanks,
Dan

Dan Goodman
Project Manager

Health Major Capital Projects
Integrated Center for Design & Construction (ICDC)

UCSF Real Estate
601 16th Street | San Francisco, CA 94158
tel: 415.290.9935
danielm.goodman@ucsf.edu

UCSF Health

From: Rob Best <Rob.Best@arup.com>
Sent: Thursday, August 20, 2020 8:37 AM
To: Raj Daswani <Raj.Daswani@arup.com>; Goodman, Daniel <DanielM.Goodman@ucsf.edu>; Jon Inman <jinman@mazzetti.com>; James Ramage <jramage@mazzetti.com>; Levitt, Anna <Anna.Levitt@ucsf.edu>
Cc: Whitney, Fred <Fred.Whitney@ucsf.edu>
Subject: RE: 995 GHG requirements

Hi Dan,

Both of the suggested times work for me.

Could I ask as well that we seek any information regarding the current status and scope of the campus EIR process as information for the conversation? That also factors into the SB 995 portion of any conversation. Would be good to know how far along that is and how they are treating NHPH. Paul Franke might be the right person to talk with in advance to understand status.

Thanks,
Rob

Rob Best PhD, CEM
Associate | Energy & Sustainability

Arup
560 Mission Street Suite 700 San Francisco CA 94105 USA
t: +1 415 957 9445
d: +1 415 946 0246
www.arup.com

From: Raj Daswani <Raj.Daswani@arup.com>
Sent: Wednesday, August 19, 2020 7:12 PM
To: Goodman, Daniel <DanielM.Goodman@ucsf.edu>; Rob Best <Rob.Best@arup.com>; Jon Inman <jinman@mazzetti.com>; James Ramage <jramage@mazzetti.com>; Levitt, Anna <Anna.Levitt@ucsf.edu>
Cc: Whitney, Fred <Fred.Whitney@ucsf.edu>
Subject: RE: 995 GHG requirements

Hi Dan –

The Monday timeslot works for me. Let's see what other schedules look like.

Regards,
Raj

From: Goodman, Daniel <DanielM.Goodman@ucsf.edu>
Sent: Wednesday, August 19, 2020 7:05 PM
To: Raj Daswani <Raj.Daswani@arup.com>; Rob Best <Rob.Best@arup.com>; Jon Inman <jinman@mazzetti.com>; James Ramage <jramage@mazzetti.com>; Levitt, Anna <Anna.Levitt@ucsf.edu>
Cc: Whitney, Fred <Fred.Whitney@ucsf.edu>
Subject: [External] RE: 995 GHG requirements

All,

I'm adding Anna into the conversation.

Rob and Raj – Thanks for the thorough explanation – that makes sense. It sounds like there are a lot of variables to consider. I think it makes sense to set up a conversation for next week. Can we do Monday 8/24 from 2-3 or Wednesday 8/26 from 4-5? Let me know if those times work and I'll send out an invite.

I'll see if I can better define the request so we know what level of detail is appropriate for this analysis.

Thanks,
Dan

Dan Goodman
Project Manager

Health Major Capital Projects
Integrated Center for Design & Construction (ICDC)
UCSF Real Estate
601 16th Street | San Francisco, CA 94158
tel: 415.290.9935
danielm.goodman@ucsf.edu

UCSF Health

From: Raj Daswani <Raj.Daswani@arup.com>
Sent: Wednesday, August 19, 2020 6:25 PM
To: Rob Best <Rob.Best@arup.com>; Goodman, Daniel <DanielM.Goodman@ucsf.edu>; Jon Inman <jinman@mazzetti.com>; James Ramage <jramage@mazzetti.com>
Cc: Whitney, Fred <Fred.Whitney@ucsf.edu>
Subject: RE: 995 GHG requirements

Thanks Rob, great summary.

We did not get into a detailed GHG analysis during masterplanning as Rob mentioned below. However, if we wanted to take a step towards this direction and/or discuss Rob's points in more detail – can I suggest setting up a conversation with Anna Levitt. We can then take the next step based on the outcome of that conversation.

We have had similar conversations with Anna on carbon accounting and calculations on other ongoing Parnassus projects (unrelated to SB995) and that would be the best first step. Arup/Mazzetti can follow through based on our agreed next steps. Let me know if you have additional thoughts.

Regards,
Raj

Raj Daswani, PE
Principal

Arup
560 Mission Street, 7th Floor, San Francisco, CA 94105
t +1 415 957 9445 **d** +1 415 946 0609
f +1 415 957 9096 **c** +1 415 595 6151
www.arup.com

From: Rob Best <Rob.Best@arup.com>
Sent: Wednesday, August 19, 2020 4:28 PM
To: Goodman, Daniel <DanielM.Goodman@ucsf.edu>; Raj Daswani <Raj.Daswani@arup.com>; Jon Inman <jinman@mazzetti.com>; James Ramage <jramage@mazzetti.com>
Cc: Whitney, Fred <Fred.Whitney@ucsf.edu>
Subject: RE: 995 GHG requirements

Dan,

My understanding of SB 995 is that it is an extension of AB 900, which allows projects that so choose to be streamlined under CEQA if they commit to offsetting any additional greenhouse gas emissions the project would incur compared to the existing use (I'll caveat that I'm getting up to speed a bit on it—this is the first project of mine where SB 995 has come up, and SB 995 is not yet passed into law, I don't believe). If my read is correct that it is functionally an extension of AB 900 for non-housing projects, then we are currently pursuing two projects with this pathway as well (under AB 900). In both of those cases, offsets were the way to go because the site prevented us from achieving the requirement of no net new GHGs any other way.

For NHPH, to answer your question, we have not done any cost analysis. However, we have reasonably observed that the project cannot get offset a significant portion of its emissions on-site with PV or other means due to the use, height, and the general lack of sun at Parnassus. So as an early assumption, we would assume that offsets would be required to meet an SB 995 target for NHPH.

In our experience working through projects with AB 900, it is comprehensive in the offsets required. While UCSF will be purchasing green power that would take care of the electrical and gas use at limited additional cost (and as part of the UC purchasing pool hopefully would meet the requirements CARB sets for emissions offsets or green power under AB 900), the transportation emissions offset might be harder. AB 900 (and I believe SB 995 as well) requires that VMT be reduced 15% as part of the project from a baseline condition, and that traffic generated by the project be offset. This has been the largest category on projects we've worked on, including a different hospital project (though there it was closer to energy than on mixed use projects that applied). Currently, some of the transportation emissions are outside the UC goals (Scope 3 are not required to be carbon neutral until 2050). So the offset cost would be higher than what the project might incur without pursuing SB 995.

One other wrinkle—since the NHPH project will be under a master EIR for the campus, for the streamlining benefit to kick in, the entire campus EIR might have to pursue SB 995, which would further increase the analysis and cost to purchase offsets. I'm less sure about that portion, and a CEQA consultant may need to weigh in on the pathways allowable, but wanted to flag that may be one issue to consider.

I hope this is helpful, and let me know if there are points that we want to discuss further or seek to understand a bit more to determine relevance to NHPH.

-Rob

Rob Best PhD, CEM
Associate | Energy & Sustainability

Arup
560 Mission Street Suite 700 San Francisco CA 94105 USA
t: +1 415 957 9445
d: +1 415 946 0246
www.arup.com

From: Goodman, Daniel <DanielM.Goodman@ucsf.edu>
Sent: Wednesday, August 19, 2020 2:56 PM
To: Raj Daswani <Raj.Daswani@arup.com>; Jon Inman <jinman@mazzetti.com>; Rob Best <Rob.Best@arup.com>; James Ramage <jramage@mazzetti.com>
Cc: Whitney, Fred <Fred.Whitney@ucsf.edu>
Subject: [External] FW: 995 GHG requirements

All,

See the below email. Can you let me know if we have analyzed this at all? I'm not aware of any existing analysis.

Given that the request is coming from our donor, and Brian Newman, I'm hoping that we can provide something quickly. Let me know your thoughts.

Thanks,
Dan

Dan Goodman
Project Manager

Health Major Capital Projects
Integrated Center for Design & Construction (ICDC)
UCSF Real Estate
601 16th Street | San Francisco, CA 94158
tel: 415.290.9935
danielm.goodman@ucsf.edu

UCSF Health

From: Eckblad, Stuart <Stuart.Eckblad@ucsf.edu>
Sent: Wednesday, August 19, 2020 2:51 PM
To: Whitney, Fred <Fred.Whitney@ucsf.edu>; Goodman, Daniel <DanielM.Goodman@ucsf.edu>
Subject: FW: 995 GHG requirements

Can you let me know re have we looked into-analyzed this?

From: Newman, Brian <Brian.Newman@ucsf.edu>
Sent: Wednesday, August 19, 2020 1:09 PM
To: Eckblad, Stuart <Stuart.Eckblad@ucsf.edu>
Cc: Polek, Elizabeth <Elizabeth.Polek@ucsf.edu>; Beauchamp, Kevin <Kevin.Beauchamp@ucsf.edu>

Subject: FW: 995 GHG requirements

Stuart – see the email below from Jackie. The GHA reduction requirements in the streamlining legislation has a material impact on the cost of the Berkeley housing project. Have we completed a similar analysis for the new hospital?

Brian Newman
Senior Associate Vice Chancellor, UCSF Real Estate
Vice President, UCSF Health

From: "Safier, Jackie" <JSafier@prometheusreg.com>
Date: Wednesday, August 19, 2020 at 1:03 PM
To: Brian Newman <Brian.Newman@ucsf.edu>
Subject: RE: 995 GHG requirements

Brian: We did analyze the cost of meeting the greenhouse gas requirements of SB 995 on our Berkeley project with Ramboll. Sharing this as it applies to UCSF if going this route. Here is what we found preliminarily as it applies to our project in Berkeley.

- Basically our 300 million project, we need 32,000 tons – to buy carbon credits it would cost about $300K. To engineer it into the project would be $20 million (so buying the offsets is the route to go)
- Issue is the A's need 531K tons (so 15 times more than us) so about $4.8 million in carbon offset credits to purchase.
- If in Berkeley we decide to apply come January or February 20202 , we would need to buy the credits then. Issue with there being a supply available given the A's purchases and pricing.

Jackie

Jackie Safier | **PROMETHEUS REAL ESTATE GROUP, INC.** | c: 650.245.1404

SWAPE Technical Consultation, Data Analysis and Litigation Support for the Environment

2656 29th Street, Suite 201
Santa Monica, CA 90405

Matt Hagemann, P.G, C.Hg.
(949) 887-9013
mhagemann@swape.com

Matthew F. Hagemann, P.G., C.Hg., QSD, QSP

Geologic and Hydrogeologic Characterization
Investigation and Remediation Strategies
Litigation Support and Testifying Expert
Industrial Stormwater Compliance
CEQA Review

Education:

M.S. Degree, Geology, California State University Los Angeles, Los Angeles, CA, 1984.
B.A. Degree, Geology, Humboldt State University, Arcata, CA, 1982.

Professional Certifications:

California Professional Geologist
California Certified Hydrogeologist
Qualified SWPPP Developer and Practitioner

Professional Experience:

Matt has 30 years of experience in environmental policy, contaminant assessment and remediation, stormwater compliance, and CEQA review. He spent nine years with the U.S. EPA in the RCRA and Superfund programs and served as EPA's Senior Science Policy Advisor in the Western Regional Office where he identified emerging threats to groundwater from perchlorate and MTBE. While with EPA, Matt also served as a Senior Hydrogeologist in the oversight of the assessment of seven major military facilities undergoing base closure. He led numerous enforcement actions under provisions of the Resource Conservation and Recovery Act (RCRA) and directed efforts to improve hydrogeologic characterization and water quality monitoring. For the past 15 years, as a founding partner with SWAPE, Matt has developed extensive client relationships and has managed complex projects that include consultation as an expert witness and a regulatory specialist, and a manager of projects ranging from industrial stormwater compliance to CEQA review of impacts from hazardous waste, air quality and greenhouse gas emissions.

Positions Matt has held include:

- Founding Partner, Soil/Water/Air Protection Enterprise (SWAPE) (2003 – present);
- Geology Instructor, Golden West College, 2010 – 2104, 2017;
- Senior Environmental Analyst, Komex H2O Science, Inc. (2000 -- 2003);

- Executive Director, Orange Coast Watch (2001 – 2004);
- Senior Science Policy Advisor and Hydrogeologist, U.S. Environmental Protection Agency (1989–1998);
- Hydrogeologist, National Park Service, Water Resources Division (1998 – 2000);
- Adjunct Faculty Member, San Francisco State University, Department of Geosciences (1993 – 1998);
- Instructor, College of Marin, Department of Science (1990 – 1995);
- Geologist, U.S. Forest Service (1986 – 1998); and
- Geologist, Dames & Moore (1984 – 1986).

Senior Regulatory and Litigation Support Analyst:

With SWAPE, Matt's responsibilities have included:

- Lead analyst and testifying expert in the review of over 300 environmental impact reports and negative declarations since 2003 under CEQA that identify significant issues with regard to hazardous waste, water resources, water quality, air quality, greenhouse gas emissions, and geologic hazards. Make recommendations for additional mitigation measures to lead agencies at the local and county level to include additional characterization of health risks and implementation of protective measures to reduce worker exposure to hazards from toxins and Valley Fever.
- Stormwater analysis, sampling and best management practice evaluation at more than 100 industrial facilities.
- Expert witness on numerous cases including, for example, perfluorooctanoic acid (PFOA) contamination of groundwater, MTBE litigation, air toxins at hazards at a school, CERCLA compliance in assessment and remediation, and industrial stormwater contamination.
- Technical assistance and litigation support for vapor intrusion concerns.
- Lead analyst and testifying expert in the review of environmental issues in license applications for large solar power plants before the California Energy Commission.
- Manager of a project to evaluate numerous formerly used military sites in the western U.S.
- Manager of a comprehensive evaluation of potential sources of perchlorate contamination in Southern California drinking water wells.
- Manager and designated expert for litigation support under provisions of Proposition 65 in the review of releases of gasoline to sources drinking water at major refineries and hundreds of gas stations throughout California.

With Komex H2O Science Inc., Matt's duties included the following:

- Senior author of a report on the extent of perchlorate contamination that was used in testimony by the former U.S. EPA Administrator and General Counsel.
- Senior researcher in the development of a comprehensive, electronically interactive chronology of MTBE use, research, and regulation.
- Senior researcher in the development of a comprehensive, electronically interactive chronology of perchlorate use, research, and regulation.
- Senior researcher in a study that estimates nationwide costs for MTBE remediation and drinking water treatment, results of which were published in newspapers nationwide and in testimony against provisions of an energy bill that would limit liability for oil companies.
- Research to support litigation to restore drinking water supplies that have been contaminated by MTBE in California and New York.

- Expert witness testimony in a case of oil production-related contamination in Mississippi.
- Lead author for a multi-volume remedial investigation report for an operating school in Los Angeles that met strict regulatory requirements and rigorous deadlines.
- Development of strategic approaches for cleanup of contaminated sites in consultation with clients and regulators.

Executive Director:

As Executive Director with Orange Coast Watch, Matt led efforts to restore water quality at Orange County beaches from multiple sources of contamination including urban runoff and the discharge of wastewater. In reporting to a Board of Directors that included representatives from leading Orange County universities and businesses, Matt prepared issue papers in the areas of treatment and disinfection of wastewater and control of the discharge of grease to sewer systems. Matt actively participated in the development of countywide water quality permits for the control of urban runoff and permits for the discharge of wastewater. Matt worked with other nonprofits to protect and restore water quality, including Surfrider, Natural Resources Defense Council and Orange County CoastKeeper as well as with business institutions including the Orange County Business Council.

Hydrogeology:

As a Senior Hydrogeologist with the U.S. Environmental Protection Agency, Matt led investigations to characterize and cleanup closing military bases, including Mare Island Naval Shipyard, Hunters Point Naval Shipyard, Treasure Island Naval Station, Alameda Naval Station, Moffett Field, Mather Army Airfield, and Sacramento Army Depot. Specific activities were as follows:

- Led efforts to model groundwater flow and contaminant transport, ensured adequacy of monitoring networks, and assessed cleanup alternatives for contaminated sediment, soil, and groundwater.
- Initiated a regional program for evaluation of groundwater sampling practices and laboratory analysis at military bases.
- Identified emerging issues, wrote technical guidance, and assisted in policy and regulation development through work on four national U.S. EPA workgroups, including the Superfund Groundwater Technical Forum and the Federal Facilities Forum.

At the request of the State of Hawaii, Matt developed a methodology to determine the vulnerability of groundwater to contamination on the islands of Maui and Oahu. He used analytical models and a GIS to show zones of vulnerability, and the results were adopted and published by the State of Hawaii and County of Maui.

As a hydrogeologist with the EPA Groundwater Protection Section, Matt worked with provisions of the Safe Drinking Water Act and NEPA to prevent drinking water contamination. Specific activities included the following:

- Received an EPA Bronze Medal for his contribution to the development of national guidance for the protection of drinking water.
- Managed the Sole Source Aquifer Program and protected the drinking water of two communities through designation under the Safe Drinking Water Act. He prepared geologic reports, conducted

public hearings, and responded to public comments from residents who were very concerned about the impact of designation.
- Reviewed a number of Environmental Impact Statements for planned major developments, including large hazardous and solid waste disposal facilities, mine reclamation, and water transfer.

Matt served as a hydrogeologist with the RCRA Hazardous Waste program. Duties were as follows:
- Supervised the hydrogeologic investigation of hazardous waste sites to determine compliance with Subtitle C requirements.
- Reviewed and wrote "part B" permits for the disposal of hazardous waste.
- Conducted RCRA Corrective Action investigations of waste sites and led inspections that formed the basis for significant enforcement actions that were developed in close coordination with U.S. EPA legal counsel.
- Wrote contract specifications and supervised contractor's investigations of waste sites.

With the National Park Service, Matt directed service-wide investigations of contaminant sources to prevent degradation of water quality, including the following tasks:
- Applied pertinent laws and regulations including CERCLA, RCRA, NEPA, NRDA, and the Clean Water Act to control military, mining, and landfill contaminants.
- Conducted watershed-scale investigations of contaminants at parks, including Yellowstone and Olympic National Park.
- Identified high-levels of perchlorate in soil adjacent to a national park in New Mexico and advised park superintendent on appropriate response actions under CERCLA.
- Served as a Park Service representative on the Interagency Perchlorate Steering Committee, a national workgroup.
- Developed a program to conduct environmental compliance audits of all National Parks while serving on a national workgroup.
- Co-authored two papers on the potential for water contamination from the operation of personal watercraft and snowmobiles, these papers serving as the basis for the development of nation-wide policy on the use of these vehicles in National Parks.
- Contributed to the Federal Multi-Agency Source Water Agreement under the Clean Water Action Plan.

Policy:

Served senior management as the Senior Science Policy Advisor with the U.S. Environmental Protection Agency, Region 9.

Activities included the following:
- Advised the Regional Administrator and senior management on emerging issues such as the potential for the gasoline additive MTBE and ammonium perchlorate to contaminate drinking water supplies.
- Shaped EPA's national response to these threats by serving on workgroups and by contributing to guidance, including the Office of Research and Development publication, Oxygenates in Water: Critical Information and Research Needs.
- Improved the technical training of EPA's scientific and engineering staff.
- Earned an EPA Bronze Medal for representing the region's 300 scientists and engineers in negotiations with the Administrator and senior management to better integrate scientific

principles into the policy-making process.
- Established national protocol for the peer review of scientific documents.

Geology:

With the U.S. Forest Service, Matt led investigations to determine hillslope stability of areas proposed for timber harvest in the central Oregon Coast Range. Specific activities were as follows:

- Mapped geology in the field, and used aerial photographic interpretation and mathematical models to determine slope stability.
- Coordinated his research with community members who were concerned with natural resource protection.
- Characterized the geology of an aquifer that serves as the sole source of drinking water for the city of Medford, Oregon.

As a consultant with Dames and Moore, Matt led geologic investigations of two contaminated sites (later listed on the Superfund NPL) in the Portland, Oregon, area and a large hazardous waste site in eastern Oregon. Duties included the following:

- Supervised year-long effort for soil and groundwater sampling.
- Conducted aquifer tests.
- Investigated active faults beneath sites proposed for hazardous waste disposal.

Teaching:

From 1990 to 1998, Matt taught at least one course per semester at the community college and university levels:

- At San Francisco State University, held an adjunct faculty position and taught courses in environmental geology, oceanography (lab and lecture), hydrogeology, and groundwater contamination.
- Served as a committee member for graduate and undergraduate students.
- Taught courses in environmental geology and oceanography at the College of Marin.

Matt is currently a part time geology instructor at Golden West College in Huntington Beach, California where he taught from 2010 to 2014 and in 2017.

Invited Testimony, Reports, Papers and Presentations:

Hagemann, M.F., 2008. Disclosure of Hazardous Waste Issues under CEQA. Presentation to the Public Environmental Law Conference, Eugene, Oregon.

Hagemann, M.F., 2008. Disclosure of Hazardous Waste Issues under CEQA. Invited presentation to U.S. EPA Region 9, San Francisco, California.

Hagemann, M.F., 2005. Use of Electronic Databases in Environmental Regulation, Policy Making and Public Participation. Brownfields 2005, Denver, Coloradao.

Hagemann, M.F., 2004. Perchlorate Contamination of the Colorado River and Impacts to Drinking Water in Nevada and the Southwestern U.S. Presentation to a meeting of the American Groundwater Trust, Las Vegas, NV (served on conference organizing committee).

Hagemann, M.F., 2004. Invited testimony to a California Senate committee hearing on air toxins at schools in Southern California, Los Angeles.

Brown, A., Farrow, J., Gray, A. and **Hagemann, M.**, 2004. An Estimate of Costs to Address MTBE Releases from Underground Storage Tanks and the Resulting Impact to Drinking Water Wells. Presentation to the Ground Water and Environmental Law Conference, National Groundwater Association.

Hagemann, M.F., 2004. Perchlorate Contamination of the Colorado River and Impacts to Drinking Water in Arizona and the Southwestern U.S. Presentation to a meeting of the American Groundwater Trust, Phoenix, AZ (served on conference organizing committee).

Hagemann, M.F., 2003. Perchlorate Contamination of the Colorado River and Impacts to Drinking Water in the Southwestern U.S. Invited presentation to a special committee meeting of the National Academy of Sciences, Irvine, CA.

Hagemann, M.F., 2003. Perchlorate Contamination of the Colorado River. Invited presentation to a tribal EPA meeting, Pechanga, CA.

Hagemann, M.F., 2003. Perchlorate Contamination of the Colorado River. Invited presentation to a meeting of tribal repesentatives, Parker, AZ.

Hagemann, M.F., 2003. Impact of Perchlorate on the Colorado River and Associated Drinking Water Supplies. Invited presentation to the Inter-Tribal Meeting, Torres Martinez Tribe.

Hagemann, M.F., 2003. The Emergence of Perchlorate as a Widespread Drinking Water Contaminant. Invited presentation to the U.S. EPA Region 9.

Hagemann, M.F., 2003. A Deductive Approach to the Assessment of Perchlorate Contamination. Invited presentation to the California Assembly Natural Resources Committee.

Hagemann, M.F., 2003. Perchlorate: A Cold War Legacy in Drinking Water. Presentation to a meeting of the National Groundwater Association.

Hagemann, M.F., 2002. From Tank to Tap: A Chronology of MTBE in Groundwater. Presentation to a meeting of the National Groundwater Association.

Hagemann, M.F., 2002. A Chronology of MTBE in Groundwater and an Estimate of Costs to Address Impacts to Groundwater. Presentation to the annual meeting of the Society of Environmental Journalists.

Hagemann, M.F., 2002. An Estimate of the Cost to Address MTBE Contamination in Groundwater (and Who Will Pay). Presentation to a meeting of the National Groundwater Association.

Hagemann, M.F., 2002. An Estimate of Costs to Address MTBE Releases from Underground Storage Tanks and the Resulting Impact to Drinking Water Wells. Presentation to a meeting of the U.S. EPA and State Underground Storage Tank Program managers.

Hagemann, M.F., 2001. From Tank to Tap: A Chronology of MTBE in Groundwater. Unpublished report.

Hagemann, M.F., 2001. Estimated Cleanup Cost for MTBE in Groundwater Used as Drinking Water. Unpublished report.

Hagemann, M.F., 2001. Estimated Costs to Address MTBE Releases from Leaking Underground Storage Tanks. Unpublished report.

Hagemann, M.F., and VanMouwerik, M., 1999. Potential Water Quality Concerns Related to Snowmobile Usage. Water Resources Division, National Park Service, Technical Report.

VanMouwerik, M. and **Hagemann, M.F**. 1999, Water Quality Concerns Related to Personal Watercraft Usage. Water Resources Division, National Park Service, Technical Report.

Hagemann, M.F., 1999, Is Dilution the Solution to Pollution in National Parks? The George Wright Society Biannual Meeting, Asheville, North Carolina.

Hagemann, M.F., 1997, The Potential for MTBE to Contaminate Groundwater. U.S. EPA Superfund Groundwater Technical Forum Annual Meeting, Las Vegas, Nevada.

Hagemann, M.F., and Gill, M., 1996, Impediments to Intrinsic Remediation, Moffett Field Naval Air Station, Conference on Intrinsic Remediation of Chlorinated Hydrocarbons, Salt Lake City.

Hagemann, M.F., Fukunaga, G.L., 1996, The Vulnerability of Groundwater to Anthropogenic Contaminants on the Island of Maui, Hawaii. Hawaii Water Works Association Annual Meeting, Maui, October 1996.

Hagemann, M. F., Fukanaga, G. L., 1996, Ranking Groundwater Vulnerability in Central Oahu, Hawaii. Proceedings, Geographic Information Systems in Environmental Resources Management, Air and Waste Management Association Publication VIP-61.

Hagemann, M.F., 1994. Groundwater Characterization and Cleanup at Closing Military Bases in California. Proceedings, California Groundwater Resources Association Meeting.

Hagemann, M.F. and Sabol, M.A., 1993. Role of the U.S. EPA in the High Plains States Groundwater Recharge Demonstration Program. Proceedings, Sixth Biennial Symposium on the Artificial Recharge of Groundwater.

Hagemann, M.F., 1993. U.S. EPA Policy on the Technical Impracticability of the Cleanup of DNAPL-contaminated Groundwater. California Groundwater Resources Association Meeting.

Hagemann, M.F., 1992. Dense Nonaqueous Phase Liquid Contamination of Groundwater: An Ounce of Prevention... Proceedings, Association of Engineering Geologists Annual Meeting, v. 35.

Other Experience:

Selected as subject matter expert for the California Professional Geologist licensing examinations, 2009-2011.

SWAPE Technical Consultation, Data Analysis and Litigation Support for the Environment

SOIL WATER AIR PROTECTION ENTERPRISE
2656 29th Street, Suite 201
Santa Monica, California 90405
Attn: Paul Rosenfeld, Ph.D.
Mobil: (310) 795-2335
Office: (310) 452-5555
Fax: (310) 452-5550
Email: prosenfeld@swape.com

Paul Rosenfeld, Ph.D.

Chemical Fate and Transport & Air Dispersion Modeling

Principal Environmental Chemist

Risk Assessment & Remediation Specialist

Education

Ph.D. Soil Chemistry, University of Washington, 1999. Dissertation on volatile organic compound filtration.

M.S. Environmental Science, U.C. Berkeley, 1995. Thesis on organic waste economics.

B.A. Environmental Studies, U.C. Santa Barbara, 1991. Thesis on wastewater treatment.

Professional Experience

Dr. Rosenfeld has over 25 years' experience conducting environmental investigations and risk assessments for evaluating impacts to human health, property, and ecological receptors. His expertise focuses on the fate and transport of environmental contaminants, human health risk, exposure assessment, and ecological restoration. Dr. Rosenfeld has evaluated and modeled emissions from oil spills, landfills, boilers and incinerators, process stacks, storage tanks, confined animal feeding operations, industrial, military and agricultural sources, unconventional oil drilling operations, and locomotive and construction engines. His project experience ranges from monitoring and modeling of pollution sources to evaluating impacts of pollution on workers at industrial facilities and residents in surrounding communities. Dr. Rosenfeld has also successfully modeled exposure to contaminants distributed by water systems and via vapor intrusion.

Dr. Rosenfeld has investigated and designed remediation programs and risk assessments for contaminated sites containing lead, heavy metals, mold, bacteria, particulate matter, petroleum hydrocarbons, chlorinated solvents, pesticides, radioactive waste, dioxins and furans, semi- and volatile organic compounds, PCBs, PAHs, creosote, perchlorate, asbestos, per- and poly-fluoroalkyl substances (PFOA/PFOS), unusual polymers, fuel oxygenates (MTBE), among other pollutants. Dr. Rosenfeld also has experience evaluating greenhouse gas emissions from various projects and is an expert on the assessment of odors from industrial and agricultural sites, as well as the evaluation of odor nuisance impacts and technologies for abatement of odorous emissions. As a principal scientist at SWAPE, Dr. Rosenfeld directs air dispersion modeling and exposure assessments. He has served as an expert witness and testified about pollution sources causing nuisance and/or personal injury at sites and has testified as an expert witness on numerous cases involving exposure to soil, water and air contaminants from industrial, railroad, agricultural, and military sources.

Professional History:

Soil Water Air Protection Enterprise (SWAPE); 2003 to present; Principal and Founding Partner
UCLA School of Public Health; 2007 to 2011; Lecturer (Assistant Researcher)
UCLA School of Public Health; 2003 to 2006; Adjunct Professor
UCLA Environmental Science and Engineering Program; 2002-2004; Doctoral Intern Coordinator
UCLA Institute of the Environment, 2001-2002; Research Associate
Komex H_2O Science, 2001 to 2003; Senior Remediation Scientist
National Groundwater Association, 2002-2004; Lecturer
San Diego State University, 1999-2001; Adjunct Professor
Anteon Corp., San Diego, 2000-2001; Remediation Project Manager
Ogden (now Amec), San Diego, 2000-2000; Remediation Project Manager
Bechtel, San Diego, California, 1999 – 2000; Risk Assessor
King County, Seattle, 1996 – 1999; Scientist
James River Corp., Washington, 1995-96; Scientist
Big Creek Lumber, Davenport, California, 1995; Scientist
Plumas Corp., California and USFS, Tahoe 1993-1995; Scientist
Peace Corps and World Wildlife Fund, St. Kitts, West Indies, 1991-1993; Scientist

Publications:

Remy, L.L., Clay T., Byers, V., **Rosenfeld P. E.** (2019) Hospital, Health, and Community Burden After Oil Refinery Fires, Richmond, California 2007 and 2012. *Environmental Health.* 18:48

Simons, R.A., Seo, Y. **Rosenfeld, P**., (2015) Modeling the Effect of Refinery Emission On Residential Property Value. Journal of Real Estate Research. 27(3):321-342

Chen, J. A, Zapata A. R., Sutherland A. J., Molmen, D.R., Chow, B. S., Wu, L. E., **Rosenfeld, P. E.,** Hesse, R. C., (2012) Sulfur Dioxide and Volatile Organic Compound Exposure To A Community In Texas City Texas Evaluated Using Aermod and Empirical Data. *American Journal of Environmental Science*, 8(6), 622-632.

Rosenfeld, P.E. & Feng, L. (2011). *The Risks of Hazardous Waste.* Amsterdam: Elsevier Publishing.

Cheremisinoff, N.P., & **Rosenfeld, P.E.** (2011). *Handbook of Pollution Prevention and Cleaner Production: Best Practices in the Agrochemical Industry*, Amsterdam: Elsevier Publishing.

Gonzalez, J., Feng, L., Sutherland, A., Waller, C., Sok, H., Hesse, R., **Rosenfeld, P.** (2010). PCBs and Dioxins/Furans in Attic Dust Collected Near Former PCB Production and Secondary Copper Facilities in Sauget, IL. *Procedia Environmental Sciences*. 113–125.

Feng, L., Wu, C., Tam, L., Sutherland, A.J., Clark, J.J., **Rosenfeld, P.E.** (2010). Dioxin and Furan Blood Lipid and Attic Dust Concentrations in Populations Living Near Four Wood Treatment Facilities in the United States. *Journal of Environmental Health*. 73(6), 34-46.

Cheremisinoff, N.P., & **Rosenfeld, P.E.** (2010). *Handbook of Pollution Prevention and Cleaner Production: Best Practices in the Wood and Paper Industries.* Amsterdam: Elsevier Publishing.

Cheremisinoff, N.P., & **Rosenfeld, P.E.** (2009). *Handbook of Pollution Prevention and Cleaner Production: Best Practices in the Petroleum Industry*. Amsterdam: Elsevier Publishing.

Wu, C., Tam, L., Clark, J., **Rosenfeld, P**. (2009). Dioxin and furan blood lipid concentrations in populations living near four wood treatment facilities in the United States. *WIT Transactions on Ecology and the Environment, Air Pollution,* 123 (17), 319-327.

Tam L. K.., Wu C. D., Clark J. J. and **Rosenfeld, P.E.** (2008). A Statistical Analysis Of Attic Dust And Blood Lipid Concentrations Of Tetrachloro-p-Dibenzodioxin (TCDD) Toxicity Equivalency Quotients (TEQ) In Two Populations Near Wood Treatment Facilities. *Organohalogen Compounds*, 70, 002252-002255.

Tam L. K.., Wu C. D., Clark J. J. and **Rosenfeld, P.E.** (2008). Methods For Collect Samples For Assessing Dioxins And Other Environmental Contaminants In Attic Dust: A Review. *Organohalogen Compounds*, 70, 000527-000530.

Hensley, A.R. A. Scott, J. J. J. Clark, **Rosenfeld, P.E.** (2007). Attic Dust and Human Blood Samples Collected near a Former Wood Treatment Facility. *Environmental Research*. 105, 194-197.

Rosenfeld, P.E., J. J. J. Clark, A. R. Hensley, M. Suffet. (2007). The Use of an Odor Wheel Classification for Evaluation of Human Health Risk Criteria for Compost Facilities. *Water Science & Technology* 55(5), 345-357.

Rosenfeld, P. E., M. Suffet. (2007). The Anatomy Of Odour Wheels For Odours Of Drinking Water, Wastewater, Compost And The Urban Environment. *Water Science & Technology* 55(5), 335-344.

Sullivan, P. J. Clark, J.J.J., Agardy, F. J., **Rosenfeld, P.E.** (2007). *Toxic Legacy, Synthetic Toxins in the Food, Water, and Air in American Cities.* Boston Massachusetts: Elsevier Publishing

Rosenfeld, P.E., and Suffet I.H. (2004). Control of Compost Odor Using High Carbon Wood Ash. *Water Science and Technology*. 49(9),171-178.

Rosenfeld P. E., J.J. Clark, I.H. (Mel) Suffet (2004). The Value of An Odor-Quality-Wheel Classification Scheme For The Urban Environment. *Water Environment Federation's Technical Exhibition and Conference (WEFTEC) 2004.* New Orleans, October 2-6, 2004.

Rosenfeld, P.E., and Suffet, I.H. (2004). Understanding Odorants Associated With Compost, Biomass Facilities, and the Land Application of Biosolids. *Water Science and Technology*. 49(9), 193-199.

Rosenfeld, P.E., and Suffet I.H. (2004). Control of Compost Odor Using High Carbon Wood Ash, *Water Science and Technology*, 49(9), 171-178.

Rosenfeld, P. E., Grey, M. A., Sellew, P. (2004). Measurement of Biosolids Odor and Odorant Emissions from Windrows, Static Pile and Biofilter. *Water Environment Research*. 76(4), 310-315.

Rosenfeld, P.E., Grey, M and Suffet, M. (2002). Compost Demonstration Project, Sacramento California Using High-Carbon Wood Ash to Control Odor at a Green Materials Composting Facility. *Integrated Waste Management Board Public Affairs Office*, Publications Clearinghouse (MS–6), Sacramento, CA Publication #442-02-008.

Rosenfeld, P.E., and C.L. Henry. (2001). Characterization of odor emissions from three different biosolids. *Water Soil and Air Pollution*. 127(1-4), 173-191.

Rosenfeld, P.E., and Henry C. L., (2000). Wood ash control of odor emissions from biosolids application. *Journal of Environmental Quality.* 29, 1662-1668.

Rosenfeld, P.E., C.L. Henry and D. Bennett. (2001). Wastewater dewatering polymer affect on biosolids odor emissions and microbial activity. *Water Environment Research*. 73(4), 363-367.

Rosenfeld, P.E., and C.L. Henry. (2001). Activated Carbon and Wood Ash Sorption of Wastewater, Compost, and Biosolids Odorants. *Water Environment Research*, 73, 388-393.

Rosenfeld, P.E., and Henry C. L., (2001). High carbon wood ash effect on biosolids microbial activity and odor. *Water Environment Research*. 131(1-4), 247-262.

Chollack, T. and **P. Rosenfeld. (**1998). Compost Amendment Handbook For Landscaping. Prepared for and distributed by the City of Redmond, Washington State.

Rosenfeld, P. E. (1992). The Mount Liamuiga Crater Trail. *Heritage Magazine of St. Kitts*, 3(2).

Rosenfeld, P. E. (1993). High School Biogas Project to Prevent Deforestation On St. Kitts. *Biomass Users Network*, 7(1).

Rosenfeld, P. E. (1998). Characterization, Quantification, and Control of Odor Emissions From Biosolids Application To Forest Soil. Doctoral Thesis. University of Washington College of Forest Resources.

Rosenfeld, P. E. (1994). Potential Utilization of Small Diameter Trees on Sierra County Public Land. Masters thesis reprinted by the Sierra County Economic Council. Sierra County, California.

Rosenfeld, P. E. (1991). How to Build a Small Rural Anaerobic Digester & Uses Of Biogas In The First And Third World. Bachelors Thesis. University of California.

Presentations:

Rosenfeld, P.E., "The science for Perfluorinated Chemicals (PFAS): What makes remediation so hard?" Law Seminars International, (May 9-10, 2018) 800 Fifth Avenue, Suite 101 Seattle, WA.

Rosenfeld, P.E., Sutherland, A; Hesse, R.; Zapata, A. (October 3-6, 2013). Air dispersion modeling of volatile organic emissions from multiple natural gas wells in Decatur, TX. *44th Western Regional Meeting, American Chemical Society.* Lecture conducted from Santa Clara, CA.

Sok, H.L.; Waller, C.C.; Feng, L.; Gonzalez, J.; Sutherland, A.J.; Wisdom-Stack, T.; Sahai, R.K.; Hesse, R.C.; **Rosenfeld, P.E.** (June 20-23, 2010). Atrazine: A Persistent Pesticide in Urban Drinking Water. *Urban Environmental Pollution*. Lecture conducted from Boston, MA.

Feng, L.; Gonzalez, J.; Sok, H.L.; Sutherland, A.J.; Waller, C.C.; Wisdom-Stack, T.; Sahai, R.K.; La, M.; Hesse, R.C.; **Rosenfeld, P.E.** (June 20-23, 2010). Bringing Environmental Justice to East St. Louis, Illinois. *Urban Environmental Pollution.* Lecture conducted from Boston, MA.

Rosenfeld, P.E. (April 19-23, 2009). Perfluoroctanoic Acid (PFOA) and Perfluoroactane Sulfonate (PFOS) Contamination in Drinking Water From the Use of Aqueous Film Forming Foams (AFFF) at Airports in the United States. *2009 Ground Water Summit and 2009 Ground Water Protection Council Spring Meeting*, Lecture conducted from Tuscon, AZ.

Rosenfeld, P.E. (April 19-23, 2009). Cost to Filter Atrazine Contamination from Drinking Water in the United States" Contamination in Drinking Water From the Use of Aqueous Film Forming Foams (AFFF) at Airports in the United States. *2009 Ground Water Summit and 2009 Ground Water Protection Council Spring Meeting*. Lecture conducted from Tuscon, AZ.

Wu, C., Tam, L., Clark, J., **Rosenfeld, P**. (20-22 July, 2009). Dioxin and furan blood lipid concentrations in populations living near four wood treatment facilities in the United States. Brebbia, C.A. and Popov, V., eds., *Air Pollution XVII: Proceedings of the Seventeenth International Conference on Modeling, Monitoring and Management of Air Pollution*. Lecture conducted from Tallinn, Estonia.

Rosenfeld, P. E. (October 15-18, 2007). Moss Point Community Exposure To Contaminants From A Releasing Facility. *The 23rd Annual International Conferences on Soils Sediment and Water.* Platform lecture conducted from University of Massachusetts, Amherst MA.

Rosenfeld, P. E. (October 15-18, 2007). The Repeated Trespass of Tritium-Contaminated Water Into A Surrounding Community Form Repeated Waste Spills From A Nuclear Power Plant. *The 23rd Annual International*

Conferences on Soils Sediment and Water. Platform lecture conducted from University of Massachusetts, Amherst MA.

Rosenfeld, P. E. (October 15-18, 2007). Somerville Community Exposure To Contaminants From Wood Treatment Facility Emissions. The *23rd Annual International Conferences on Soils Sediment and Water*. Lecture conducted from University of Massachusetts, Amherst MA.

Rosenfeld P. E. (March 2007). Production, Chemical Properties, Toxicology, & Treatment Case Studies of 1,2,3-Trichloropropane (TCP). *The Association for Environmental Health and Sciences (AEHS) Annual Meeting*. Lecture conducted from San Diego, CA.

Rosenfeld P. E. (March 2007). Blood and Attic Sampling for Dioxin/Furan, PAH, and Metal Exposure in Florala, Alabama. *The AEHS Annual Meeting.* Lecture conducted from San Diego, CA.

Hensley A.R., Scott, A., **Rosenfeld P.E.,** Clark, J.J.J. (August 21 – 25, 2006). Dioxin Containing Attic Dust And Human Blood Samples Collected Near A Former Wood Treatment Facility. *The 26th International Symposium on Halogenated Persistent Organic Pollutants – DIOXIN2006*. Lecture conducted from Radisson SAS Scandinavia Hotel in Oslo Norway.

Hensley A.R., Scott, A., **Rosenfeld P.E.,** Clark, J.J.J. (November 4-8, 2006). Dioxin Containing Attic Dust And Human Blood Samples Collected Near A Former Wood Treatment Facility. *APHA 134 Annual Meeting & Exposition.* Lecture conducted from Boston Massachusetts.

Paul Rosenfeld Ph.D. (October 24-25, 2005). Fate, Transport and Persistence of PFOA and Related Chemicals. Mealey's C8/PFOA. *Science, Risk & Litigation Conference.* Lecture conducted from The Rittenhouse Hotel, Philadelphia, PA.

Paul Rosenfeld Ph.D. (September 19, 2005). Brominated Flame Retardants in Groundwater: Pathways to Human Ingestion, *Toxicology and Remediation PEMA Emerging Contaminant Conference*. Lecture conducted from Hilton Hotel, Irvine California.

Paul Rosenfeld Ph.D. (September 19, 2005). Fate, Transport, Toxicity, And Persistence of 1,2,3-TCP. *PEMA Emerging Contaminant Conference.* Lecture conducted from Hilton Hotel in Irvine, California.

Paul Rosenfeld Ph.D. (September 26-27, 2005). Fate, Transport and Persistence of PDBEs. *Mealey's Groundwater Conference.* Lecture conducted from Ritz Carlton Hotel, Marina Del Ray, California.

Paul Rosenfeld Ph.D. (June 7-8, 2005). Fate, Transport and Persistence of PFOA and Related Chemicals. *International Society of Environmental Forensics: Focus On Emerging Contaminants*. Lecture conducted from Sheraton Oceanfront Hotel, Virginia Beach, Virginia.

Paul Rosenfeld Ph.D. (July 21-22, 2005). Fate Transport, Persistence and Toxicology of PFOA and Related Perfluorochemicals. *2005 National Groundwater Association Ground Water And Environmental Law Conference*. Lecture conducted from Wyndham Baltimore Inner Harbor, Baltimore Maryland.

Paul Rosenfeld Ph.D. (July 21-22, 2005). Brominated Flame Retardants in Groundwater: Pathways to Human Ingestion, Toxicology and Remediation. *2005 National Groundwater Association Ground Water and Environmental Law Conference.* Lecture conducted from Wyndham Baltimore Inner Harbor, Baltimore Maryland.

Paul Rosenfeld, Ph.D. and James Clark Ph.D. and Rob Hesse R.G. (May 5-6, 2004). Tert-butyl Alcohol Liability and Toxicology, A National Problem and Unquantified Liability. *National Groundwater Association. Environmental Law Conference*. Lecture conducted from Congress Plaza Hotel, Chicago Illinois.

Paul Rosenfeld, Ph.D. (March 2004). Perchlorate Toxicology. *Meeting of the American Groundwater Trust*. Lecture conducted from Phoenix Arizona.

Hagemann, M.F., **Paul Rosenfeld, Ph.D.** and Rob Hesse (2004). Perchlorate Contamination of the Colorado River. *Meeting of tribal representatives*. Lecture conducted from Parker, AZ.

Paul Rosenfeld, Ph.D. (April 7, 2004). A National Damage Assessment Model For PCE and Dry Cleaners. *Drycleaner Symposium. California Ground Water Association*. Lecture conducted from Radison Hotel, Sacramento, California.

Rosenfeld, P. E., Grey, M., (June 2003) Two stage biofilter for biosolids composting odor control. *Seventh International In Situ And On Site Bioremediation Symposium Battelle Conference* Orlando, FL.

Paul Rosenfeld, Ph.D. and James Clark Ph.D. (February 20-21, 2003) Understanding Historical Use, Chemical Properties, Toxicity and Regulatory Guidance of 1,4 Dioxane. *National Groundwater Association. Southwest Focus Conference. Water Supply and Emerging Contaminants*.. Lecture conducted from Hyatt Regency Phoenix Arizona.

Paul Rosenfeld, Ph.D. (February 6-7, 2003). Underground Storage Tank Litigation and Remediation. *California CUPA Forum*. Lecture conducted from Marriott Hotel, Anaheim California.

Paul Rosenfeld, Ph.D. (October 23, 2002) Underground Storage Tank Litigation and Remediation. *EPA Underground Storage Tank Roundtable*. Lecture conducted from Sacramento California.

Rosenfeld, P.E. and Suffet, M. (October 7- 10, 2002). Understanding Odor from Compost, *Wastewater and Industrial Processes. Sixth Annual Symposium On Off Flavors in the Aquatic Environment. International Water Association*. Lecture conducted from Barcelona Spain.

Rosenfeld, P.E. and Suffet, M. (October 7- 10, 2002). Using High Carbon Wood Ash to Control Compost Odor. *Sixth Annual Symposium On Off Flavors in the Aquatic Environment. International Water Association*. Lecture conducted from Barcelona Spain.

Rosenfeld, P.E. and Grey, M. A. (September 22-24, 2002). Biocycle Composting For Coastal Sage Restoration. *Northwest Biosolids Management Association*. Lecture conducted from Vancouver Washington..

Rosenfeld, P.E. and Grey, M. A. (November 11-14, 2002). Using High-Carbon Wood Ash to Control Odor at a Green Materials Composting Facility. *Soil Science Society Annual Conferenc*e. Lecture conducted from Indianapolis, Maryland.

Rosenfeld. P.E. (September 16, 2000). Two stage biofilter for biosolids composting odor control. *Water Environment Federation.* Lecture conducted from Anaheim California.

Rosenfeld. P.E. (October 16, 2000). Wood ash and biofilter control of compost odor. *Biofest.* Lecture conducted from Ocean Shores, California.

Rosenfeld, P.E. (2000). Bioremediation Using Organic Soil Amendments. *California Resource Recovery Association*. Lecture conducted from Sacramento California.

Rosenfeld, P.E., C.L. Henry, R. Harrison. (1998). Oat and Grass Seed Germination and Nitrogen and Sulfur Emissions Following Biosolids Incorporation With High-Carbon Wood-Ash. *Water Environment Federation 12th Annual Residuals and Biosolids Management Conference Proceedings*. Lecture conducted from Bellevue Washington.

Rosenfeld, P.E., and C.L. Henry. (1999). An evaluation of ash incorporation with biosolids for odor reduction. *Soil Science Society of America*. Lecture conducted from Salt Lake City Utah.

Rosenfeld, P.E., C.L. Henry, R. Harrison. (1998). Comparison of Microbial Activity and Odor Emissions from Three Different Biosolids Applied to Forest Soil. *Brown and Caldwell.* Lecture conducted from Seattle Washington.

Rosenfeld, P.E., C.L. Henry. (1998). Characterization, Quantification, and Control of Odor Emissions from Biosolids Application To Forest Soil. *Biofest.* Lecture conducted from Lake Chelan, Washington.

Rosenfeld, P.E, C.L. Henry, R. Harrison. (1998). Oat and Grass Seed Germination and Nitrogen and Sulfur Emissions Following Biosolids Incorporation With High-Carbon Wood-Ash. Water Environment Federation 12th Annual Residuals and Biosolids Management Conference Proceedings. Lecture conducted from Bellevue Washington.

Rosenfeld, P.E., C.L. Henry, R. B. Harrison, and R. Dills. (1997). Comparison of Odor Emissions From Three Different Biosolids Applied to Forest Soil. *Soil Science Society of America*. Lecture conducted from Anaheim California.

Teaching Experience:

UCLA Department of Environmental Health (Summer 2003 through 20010) Taught Environmental Health Science 100 to students, including undergrad, medical doctors, public health professionals and nurses. Course focused on the health effects of environmental contaminants.

National Ground Water Association, Successful Remediation Technologies. Custom Course in Sante Fe, New Mexico. May 21, 2002. Focused on fate and transport of fuel contaminants associated with underground storage tanks.

National Ground Water Association; Successful Remediation Technologies Course in Chicago Illinois. April 1, 2002. Focused on fate and transport of contaminants associated with Superfund and RCRA sites.

California Integrated Waste Management Board, April and May, 2001. Alternative Landfill Caps Seminar in San Diego, Ventura, and San Francisco. Focused on both prescriptive and innovative landfill cover design.

UCLA Department of Environmental Engineering, February 5, 2002. Seminar on Successful Remediation Technologies focusing on Groundwater Remediation.

University Of Washington, Soil Science Program, Teaching Assistant for several courses including: Soil Chemistry, Organic Soil Amendments, and Soil Stability.

U.C. Berkeley, Environmental Science Program Teaching Assistant for Environmental Science 10.

Academic Grants Awarded:

California Integrated Waste Management Board. $41,000 grant awarded to UCLA Institute of the Environment. Goal: To investigate effect of high carbon wood ash on volatile organic emissions from compost. 2001.

Synagro Technologies, Corona California: $10,000 grant awarded to San Diego State University.
Goal: investigate effect of biosolids for restoration and remediation of degraded coastal sage soils. 2000.

King County, Department of Research and Technology, Washington State. $100,000 grant awarded to University of Washington: Goal: To investigate odor emissions from biosolids application and the effect of polymers and ash on VOC emissions. 1998.

Northwest Biosolids Management Association, Washington State. $20,000 grant awarded to investigate effect of polymers and ash on VOC emissions from biosolids. 1997.

James River Corporation, Oregon: $10,000 grant was awarded to investigate the success of genetically engineered Poplar trees with resistance to round-up. 1996.

United State Forest Service, Tahoe National Forest: $15,000 grant was awarded to investigating fire ecology of the Tahoe National Forest. 1995.

Kellogg Foundation, Washington D.C. $500 grant was awarded to construct a large anaerobic digester on St. Kitts in West Indies. 1993

Deposition and/or Trial Testimony:

In the Circuit Court Of The Twentieth Judicial Circuit, St Clair County, Illinois
Martha Custer et al., Plaintiff vs. Cerro Flow Products, Inc., Defendants
Case No.: No. 0i9-L-2295
Rosenfeld Deposition, 5-14-2021
Trial, October 8-4-2021

In the Circuit Court of Cook County Illinois
Joseph Rafferty, Plaintiff vs. Consolidated Rail Corporation and National Railroad Passenger Corporation d/b/a AMTRAK,
Case No.: No. 18-L-6845
Rosenfeld Deposition, 6-28-2021

In the United States District Court For the Northern District of Illinois
Theresa Romcoe, Plaintiff vs. Northeast Illinois Regional Commuter Railroad Corporation d/b/a METRA Rail, Defendants
Case No.: No. 17-cv-8517
Rosenfeld Deposition, 5-25-2021

In the Superior Court of the State of Arizona In and For the Cunty of Maricopa
Mary Tryon et al., Plaintiff vs. The City of Pheonix v. Cox Cactus Farm, L.L.C., Utah Shelter Systems, Inc.
Case Number CV20127-094749
Rosenfeld Deposition: 5-7-2021

In the United States District Court for the Eastern District of Texas Beaumont Division
Robinson, Jeremy et al *Plaintiffs*, vs. CNA Insurance Company et al.
Case Number 1:17-cv-000508
Rosenfeld Deposition: 3-25-2021

In the Superior Court of the State of California, County of San Bernardino
Gary Garner, Personal Representative for the Estate of Melvin Garner vs. BNSF Railway Company.
Case No. 1720288
Rosenfeld Deposition 2-23-2021

In the Superior Court of the State of California, County of Los Angeles, Spring Street Courthouse
Benny M Rodriguez vs. Union Pacific Railroad, A Corporation, et al.
Case No. 18STCV01162
Rosenfeld Deposition 12-23-2020

In the Circuit Court of Jackson County, Missouri
Karen Cornwell, *Plaintiff,* vs. Marathon Petroleum, LP, *Defendant.*
Case No.: 1716-CV10006
Rosenfeld Deposition. 8-30-2019

In the United States District Court For The District of New Jersey
Duarte et al, *Plaintiffs,* vs. United States Metals Refining Company et. al. *Defendant.*
Case No.: 2:17-cv-01624-ES-SCM
Rosenfeld Deposition. 6-7-2019

In the United States District Court of Southern District of Texas Galveston Division
M/T Carla Maersk, *Plaintiffs,* vs. Conti 168., Schiffahrts-GMBH & Co. Bulker KG MS "Conti Perdido" *Defendant.*
Case No.: 3:15-CV-00106 consolidated with 3:15-CV-00237
Rosenfeld Deposition. 5-9-2019

In The Superior Court of the State of California In And For The County Of Los Angeles – Santa Monica
Carole-Taddeo-Bates et al., vs. Ifran Khan et al., Defendants
Case No.: No. BC615636
Rosenfeld Deposition, 1-26-2019

In The Superior Court of the State of California In And For The County Of Los Angeles – Santa Monica
The San Gabriel Valley Council of Governments et al. vs El Adobe Apts. Inc. et al., Defendants
Case No.: No. BC646857
Rosenfeld Deposition, 10-6-2018; Trial 3-7-19

In United States District Court For The District of Colorado
Bells et al. Plaintiff vs. The 3M Company et al., Defendants
Case No.: 1:16-cv-02531-RBJ
Rosenfeld Deposition, 3-15-2018 and 4-3-2018

In The District Court Of Regan County, Texas, 112th Judicial District
Phillip Bales et al., Plaintiff vs. Dow Agrosciences, LLC, et al., Defendants
Cause No.: 1923
Rosenfeld Deposition, 11-17-2017

In The Superior Court of the State of California In And For The County Of Contra Costa
Simons et al., Plaintiffs vs. Chevron Corporation, et al., Defendants
Cause No C12-01481
Rosenfeld Deposition, 11-20-2017

In The Circuit Court Of The Twentieth Judicial Circuit, St Clair County, Illinois
Martha Custer et al., Plaintiff vs. Cerro Flow Products, Inc., Defendants
Case No.: No. 0i9-L-2295
Rosenfeld Deposition, 8-23-2017

In United States District Court For The Southern District of Mississippi
Guy Manuel vs. The BP Exploration et al., Defendants
Case: No 1:19-cv-00315-RHW
Rosenfeld Deposition, 4-22-2020

In The Superior Court of the State of California, For The County of Los Angeles
Warrn Gilbert and Penny Gilber, Plaintiff vs. BMW of North America LLC
Case No.: LC102019 (c/w BC582154)
Rosenfeld Deposition, 8-16-2017, Trail 8-28-2018

In the Northern District Court of Mississippi, Greenville Division
Brenda J. Cooper, et al., *Plaintiffs,* vs. Meritor Inc., et al., *Defendants*
Case Number: 4:16-cv-52-DMB-JVM
Rosenfeld Deposition: July 2017

In The Superior Court of the State of Washington, County of Snohomish
Michael Davis and Julie Davis et al., Plaintiff vs. Cedar Grove Composting Inc., Defendants
Case No.: No. 13-2-03987-5
Rosenfeld Deposition, February 2017
Trial, March 2017

In The Superior Court of the State of California, County of Alameda
Charles Spain., Plaintiff vs. Thermo Fisher Scientific, et al., Defendants
Case No.: RG14711115
Rosenfeld Deposition, September 2015

In The Iowa District Court In And For Poweshiek County
Russell D. Winburn, et al., Plaintiffs vs. Doug Hoksbergen, et al., Defendants
Case No.: LALA002187
Rosenfeld Deposition, August 2015

In The Circuit Court of Ohio County, West Virginia
Robert Andrews, et al. v. Antero, et al.
Civil Action N0. 14-C-30000
Rosenfeld Deposition, June 2015

In The Iowa District Court For Muscatine County
Laurie Freeman et. al. Plaintiffs vs. Grain Processing Corporation, Defendant
Case No 4980
Rosenfeld Deposition: May 2015

In the Circuit Court of the 17th Judicial Circuit, in and For Broward County, Florida
Walter Hinton, et. al. Plaintiff, vs. City of Fort Lauderdale, Florida, a Municipality, Defendant.
Case Number CACE07030358 (26)
Rosenfeld Deposition: December 2014

In the County Court of Dallas County Texas
Lisa Parr et al, *Plaintiff*, vs. Aruba et al, *Defendant.*
Case Number cc-11-01650-E
Rosenfeld Deposition: March and September 2013
Rosenfeld Trial: April 2014

In the Court of Common Pleas of Tuscarawas County Ohio
John Michael Abicht, et al., *Plaintiffs,* vs. Republic Services, Inc., et al., *Defendants*
Case Number: 2008 CT 10 0741 (Cons. w/ 2009 CV 10 0987)
Rosenfeld Deposition: October 2012

In the United States District Court for the Middle District of Alabama, Northern Division
James K. Benefield, et al., *Plaintiffs*, vs. International Paper Company, *Defendant*.
Civil Action Number 2:09-cv-232-WHA-TFM
Rosenfeld Deposition: July 2010, June 2011

In the Circuit Court of Jefferson County Alabama
Jaeanette Moss Anthony, et al., *Plaintiffs*, vs. Drummond Company Inc., et al., *Defendants*
Civil Action No. CV 2008-2076
Rosenfeld Deposition: September 2010

In the United States District Court, Western District Lafayette Division
Ackle et al., *Plaintiffs*, vs. Citgo Petroleum Corporation, et al., *Defendants*.
Case Number 2:07CV1052
Rosenfeld Deposition: July 2009

EXHIBIT 3

ANDREW JAY COLEMAN, PH.D., P.G. – Executive Level Technical Leadership in Science and Engineering, R&D, and Remediation Services

ELECTRIC POWER RESEARCH INSTITUTE, Palo Alto, CA
Executive Director, Member and Technical Services, December 2015-Present
Sr. Technical Executive, Environment, Geothermal, December 2014- December 2015
Sr. Program Manager, Environment, Research Strategy December 2013 to December 2014
Marketing Manager, Environment & Renewable Energy Sector, September 2010 to December 2013

LEHIGH UNIVERSITY – Bethlehem, PA, P.C. Rossin College of Engineering and Applied Science
Professor of Practice and Director of the Energy Systems Engineering Institute , April 2009 to September 2010, and adjunct appointment through 2022. By university consent, created, led and created succession plan for its place in the College. Responsibilities included teaching several courses and developing research for ESEI, coordinating industrial sponsorship and collaboration. U.S. DOE/NETL FOA 152– Keystone Smart Grid Fellowship Program

ELECTRIC POWER RESEARCH INSTITUTE, Palo Alto, CA
Account Executive, Technical Advisory Services, Environment Sector, May 2008 to April 2009

Program Manager, Manufactured Gas Plant Remediation Program, May 2000 to May 2008
Developed collaborative research projects and publications for more than 35 companies in the US and the European Union. Provided innovative, remediation and construction solutions on an individual and collaborative basis. Interfaced with regulators on land redevelopment scopes.

PUBLIC SERVICE ELECTRIC AND GAS COMPANY, Newark, NJ
Senior Project Scientist, Manufactured Gas Plant Site Remediation, December 1994 to May 2000
Special consultant to PSE&G's Director of Environmental Affairs

ENSR Consulting and Engineering, Piscataway, NJ
Project Manager, Geologist, June 1991 to Dec 1994 Confidential Clients Site Management, Environmental remediation and construction work.

EDUCATION

Doctor of Philosophy (Ph.D.) Graduate School of the City of New York, 2000 Str. Geology
Master of Philosophy (M.Phil.) *Graduate School of the City of New York,* 1998
Master of Arts (M.A.) The City College of New York, 1994 Structural Geology
Bachelor of Arts (B.A.) LEHIGH UNIVERSITY 1990 Geology

RECENT PROFESSIONAL ACTIVITY

MIT Sloan School of Business – Leadership and Management Certificate 2022
Cornell University General Management courses accounting, finance 2012, Villanova University Mini EMBA –spring semester 2010

Patent Holder: KD053285-01-01 – Res-SAT® Tool US Patent and Trademark Office - 2009
Professional Geologist (current licenses) in PA, DE, TN, CA.
Certified by American State Board of Geologists

SELECT PUBLICATIONS

Coleman, Andrew J., Suemnicht, G., Hirtz, P., Trautz, R., 2016, Corrosion of Materials Used in Geothermal Power Generation. EPRI project, April, in press

Coleman, Andrew J., Suemnicht, G., 2015, United States- Japan Bilateral Enhanced Geothermal Systems Project: Phase II- Review of Seismic, Monitoring Practices at the Geysers Geothermal Field, CA And Hijiori and Ogachi Fields, Japan, EPRI Project 3002005464. April

Coleman, Andrew J., Suemnicht, G., 2014, United States – Japan Bilateral Enhanced Geothermal Systems Project: Phase I – Review of Injection, Monitoring, and Stimulation at the Geysers Geothermal Field, EPRI Report 3002004577. September

Coleman, Andrew J. and Sarah Jordaan, Development of Shale Gas Reserves, 2013: Environmental And Resource Challenges, PowerGen International, Orlando, November.

Coleman, Andrew J. 2012, Present and Future Water Consumption in Pennsylvania's Marcellus Shale Region, Amherst MA, October 15-18.

EXHIBIT 4

Charles R. Olson (SBN 130984)
Philip J. Sciranka (SBN 287932)
Carolyn J. Lee (SBN 294161)
LUBIN OLSON & NIEWIADOMSKI LLP
The Transamerica Pyramid
600 Montgomery Street, 14th Floor
San Francisco, California 94111
Telephone: (415) 981-0550
Facsimile: (415) 981-4343
colson@lubinolson.com
psciranka@lubinolson.com
clee@lubinolson.com

Anagha Dandekar Clifford (SBN 233806)
UNIVERSITY OF CALIFORNIA
Office of General Counsel
1111 Franklin Street, 8th Floor
Oakland, California 94607
Telephone: (510) 987-0356
Facsimile: (510) 987-9757
anagha.clifford@ucop.edu

Attorneys for Defendants/Respondents
THE BOARD OF REGENTS OF THE UNIVERSITY OF CALIFORNIA; UNIVERSITY OF CALIFORNIA; THE REGENTS OF THE UNIVERSITY OF CALIFORNIA

[Exempt From Filing Fee Government Code § 6103]

SUPERIOR COURT OF THE STATE OF CALIFORNIA

COUNTY OF ALAMEDA

PARNASSUS NEIGHBORHOOD COALITION; and CALVIN WELCH,

Plaintiffs/Petitioners,

v.

THE BOARD OF REGENTS OF THE UNIVERSITY OF CALIFORNIA; and DOES 1 through 10, inclusive,

Defendants/Respondents.

Case No. RG21088939
[Related Case Nos. RG21089332 and RG21090517]

ASSIGNED FOR ALL PRE-TRIAL PURPOSES TO JUDGE FRANK ROESCH, DEPT. 17

DECLARATION OF BRIAN NEWMAN IN OPPOSITION TO PARNASSUS NEIGHBORHOOD COALITION, CALVIN WELCH AND YERBA BUENA NEIGHBORHOOD COALITION'S MOTIONS FOR PRELIMINARY INJUNCTION

Reservation Nos.: **R-2283377, R-2283371**
Date: September 16, 2021
Time: 3:30 p.m.
Dept.: 17

YERBA BUENA NEIGHBORHOOD CONSORTIUM, LLC, a subsidiary of the non-profit California corporation Tenants and Owners Development Corporation (TODCO), Petitioners, v. UNIVERSITY OF CALIFORNIA; THE REGENTS OF THE UNIVERSITY OF CALIFORNIA; and DOES 1 through 5, inclusive, Respondents.	Action Filed: February 19, 2021 Merits Hearing/Trial: January 14, 2022 Case No. RG21090517 [Related Case Nos. RG21089332 and RG21088939] ASSIGNED FOR ALL PRE-TRIAL PURPOSES TO JUDGE FRANK ROESCH, DEPT. 17 Action Filed: February 19, 2021 Merits Hearing/Trial: January 14, 2022

DECLARATION OF BRIAN NEWMAN

I, Brian Newman, declare as follows:

1. I am the Senior Associate Vice Chancellor, UCSF Real Estate, at the University of California, San Francisco ("UCSF" or the "University"). I have held this position since August 2018. Prior to that, I was the Vice President of Campus Development at Oregon Health and Science University. My responsibilities in my current position include executive-level strategy and oversight of campus planning, real estate transactions, lease portfolio management, the campus architect, building permits and inspections, and design and construction for UCSF, including both the University and UCSF Health.

2. I have personal knowledge of all of the matters stated herein, and, if called as a witness in this action, I could and would competently testify to those matters.

3. Since August 2018, one of my primary responsibilities has been to work with and coordinate the efforts of the UCSF leadership, Campus Planning, and the UCSF Medical Center on the development and future implementation of the Comprehensive Parnassus Heights Plan ("CPHP"). The CPHP contains a master plan-level guidance for the modernization of the Parnassus Heights campus site, which is UCSF's oldest campus site, ensuring that a modernized Parnassus Heights enhances UCSF's status as a leading academic medical center in the region, state, and nation and as an anchor institution in San Francisco. It focuses on the configuration of

buildings and open space areas and the major types of uses within buildings (e.g., inpatient, outpatient, research, instruction, support, housing, and parking), with special attention paid to the adjacency of uses especially at the intersection of clinical, research, and instruction uses.

4. Other than the pressing need to modernize the Parnassus Heights facilities, a primary driver of the CPHP was the need to replace the aging Moffitt Hospital by 2030 because of SB 1953. SB 1953 became effective on September 21, 1994, and established a seismic safety buildings program under the California Office of Statewide Health Planning and Development's jurisdiction. SB 1953 required that all general acute care hospital facilities in California meet stringent seismic safety requirements by 2013 or 2030, depending on the physical condition of the hospital, in order to function as emergency centers following a major seismic event. Buildings that could not meet the deadlines needed to be decommissioned as in-patient hospital facilities.

5. In total, the CPHP provides for development of approximately 2.90 million gross square feet ("gsf") of new building space at Parnassus Heights. When accounting for existing campus site development (approximately 3.92 million gsf); demolition that was approved under the 2014 LRDP but not yet implemented (approximately 187,000 gsf); and potential additional building demolition that would occur under the CPHP (approximately 688,000 gsf), the total amount of campus building space upon full implementation of the CPHP would be approximately 5.97 million gsf, including instruction, research, clinical, and support space, housing, and structured parking.

6. Not only is Moffitt Hospital seismically deficient and outdated for modern hospital purposes, Parnassus Heights' two hospitals (Long and Moffitt) do not contain sufficient beds to meet the demand for the type of highly sophisticated medical cases that are referred to UCSF. Parnassus Heights is UCSF's primary site for adult clinical care and provides tertiary and quaternary care. Over the past three years, Long and Moffitt hospitals have turned away between 2,500-3,000 referrals annually because of inadequate bed capacity.

7. In order to meet SB 1953's 2030 deadline to decommission Moffitt Hospital as an inpatient facility and to address the immediate need for modern research space and more student and faculty housing at Parnassus Heights, the CPHP identified four major projects referred to as

the Initial Phase projects in the CPHP and the CPHP EIR that would be implemented by 2030. These include the New Hospital to replace Moffitt Hospital, the Research and Academic Building ("RAB"), the Initial Aldea Housing Densification, and the Irving Street Arrival project. There are also a number of smaller, mostly infrastructure-related projects referred to as the Initial Phase Improvements that would be completed by 2030, including the Parnassus Avenue Streetscape improvements, service corridor and utility line extensions, fuel tank replacement, ammonia tank replacement, among others.

8. Because 61 acres of the approximately 107 acres at the Parnassus Heights campus site are dedicated open space located in the Mount Sutro Open Space Reserve, UCSF's built space at Parnassus Heights is concentrated in the north end of the campus site in a dense pattern. As implementation of the CPHP will require demolition of some large existing structures to create building areas for new structures such as the RAB and New Hospital, and because the RAB will require almost four years for construction and occupancy and because the New Hospital will require approximately five years for construction and one year of testing prior to opening for patients in 2030, the timing and sequencing of construction projects implementing the CPHP is both very tight and very crucial. The first CPHP project, the Integrated Center for Design and Construction ("ICDC"), would provide temporary space for UCSF's design and construction teams to work and meet during the construction of the CPHP Initial Phase projects. It is currently being constructed in two floors of the Kalmanovitz Library Garage and is anticipated to be completed and occupied by the end of 2021.

9. The planning and space needs assessment leading up to the preparation of the CPHP identified a glaring need for expanded and state of the art research facilities at Parnassus Heights to support UCSF's health care mission. As the new RAB will be constructed on the site of the existing UC Hall, UC Hall will need to be demolished prior to commencement of RAB construction. Demolition of UC Hall must be preceded by abatement of hazardous building materials as the building was constructed in 1917. And as UC Hall contains Toland Hall, home of the WPA-era Zakheim Murals, the effort to remove and store the murals must occur prior to the start of hard demolition of UC Hall. Abatement work on UC Hall is scheduled to commence in

the fourth quarter of 2021 and be completed by the end of the second quarter of 2022. Mural removal efforts began with design, conservation and planning in the first quarter of 2021, with removal and storage of the murals scheduled to be completed by the fourth quarter of 2021. The Court's issuance of a Temporary Restraining Order on August 23, 2021, has potentially altered that schedule. Hard demolition of UC Hall would commence in the fourth quarter of 2022 and be completed by the second quarter of 2023. RAB construction would commence in the summer of 2023 and be completed in the summer of 2026.

10. The New Hospital, which was analyzed at a program-level in the CPHP EIR and which will be the subject of a project-specific EIR anticipated to be certified by the Regents in 2022, will be built on the site of the existing Langley Porter Psychiatric Institute ("LPPI"). Abatement of hazardous building materials and demolition of the interior of LPPI is scheduled to begin in the first quarter of 2022 and be completed in the summer of 2023. Exterior demolition of LPPI will be completed in the first three quarters of 2023. Early site work and OSHPD review of the New Hospital will commence in September 2023 and be completed in the summer of 2024. Construction of the New Hospital is scheduled to commence in summer of 2024 and be completed in 2029.

11. While abatement and demolition activities are conducted on UC Hall and LPPI, work will also be commencing on the Irving Street Arrival project and some of the Initial Phase Improvements.

12. If any of the actions implementing the CPHP Initial Phase projects described above is delayed, it will cause a chain reaction that leads to delays in other projects, and ultimately threaten UCSF's ability to comply with SB 1953 by 2030 and meet the currently unmet demand for patient beds as Parnassus Heights. If demolition of UC Hall is delayed, it will result in delays in construction and operation of the RAB, denying UCSF faculty and staff access to modern research facilities essential to their cutting edge efforts to address the most complex medical problems facing humanity. Delays also will inevitably result in increased construction costs. Construction costs in the Bay Area for major projects such as the RAB have been escalating on average 4-5%. For a project like the RAB, with an estimated construction cost of $470M, every

month of delay could increase construction costs by an additional $1.96M.

13. All of the CPHP projects described above will result in 1,000's of construction jobs and even more permanent jobs in these new facilities, providing a needed jolt to the San Francisco economy as it emerges from the pandemic shut downs.

14. In connection with the CPHP, UCSF and the City and County of San Francisco entered into a Memorandum of Understanding ("MOU") regarding various community benefits. I was one of the lead UCSF negotiators in reaching agreement on the MOU. Pursuant to the MOU, UCSF agreed to deliver a total of 1,263 net new housing units in San Francisco by 2050 (inclusive of the 762 units already included in the CPHP and analyzed in the CPHP EIR), pay approximately $20,000,000 to SFMTA to improve transit service to Parnassus Heights, implement certain agreed upon workforce development proposals, including 30% local hire for construction jobs, expand its partnerships with the City for the provision of psychiatric services, pediatric and mental health support services for youth, among other benefits to the City and the community.

15. In connection with the WPA-era Zakheim Murals described above, I took the lead on behalf of UCSF related to the disposition of the Zakheim Murals. Based on preliminary cost estimates and technical assessments UCSF received from Architectural Resources Group ("ARG") and Page & Turnbull early in 2020, and the likelihood that the Zakheim Murals would be substantially damaged or destroyed in the event of removal and relocation from Toland Hall, UCSF initially determined that the estimated cost of physical preservation, removal and relocation of the Zakheim Murals would be prohibitive in light of UCSF's primary responsibility to support its academic health care mission when allocating public funds to its various projects. Given this preliminary decision, UCSF notified the U.S. General Services Administration ("GSA") of the potential destruction of the Zakheim Murals on May 22, 2020. A true and correct copy of the letter to the GSA is attached hereto as Exhibit A. UCSF also extended a written notice of UCSF's intent to demolish UC Hall and the Zakheim Murals contained therein as a courtesy to the family of Bernard Zakheim on June 4, 2020. A true and correct copy of the letter to the Zakheim family is attached hereto as Exhibit B. In the written notice to the Zakheim family, UCSF offered the Zakheim family an opportunity to preserve, remove and relocate the Zakheim Murals at their own

cost, and also described the procedures of notifying the public and existing organizations with an art-related purpose should a third-party be able to preserve, remove and relocate the Zakheim Murals. Both GSA and the Zakheim family indicated that neither had the financial resources to pay for the removal, storage and reinstallation of the Zakheim Murals; however, both parties expressed desire to work with UCSF to preserve the Zakheim Murals and to determine a solution that would allow UCSF to move forward with its work on UC Hall while preserving the public interest in keeping the Zakheim Murals accessible to members of the community.

16. After receiving feedback from GSA, the Zakheim family, the City's Historic Preservation Commission and Board of Supervisors, and the community on UCSF's initial plans for the Zakheim Murals, UCSF decided to issue a request for proposals for the removal, conservation, and transportation of the Zakheim Murals to a temporary off-site storage facility. A true and correct copy of the issued Request for Proposals dated September 21, 2020, is attached hereto as Exhibit C. The request for proposals process concluded in October 2020, and UCSF selected ARG Conservation Services to conduct the work. This process was a public process, and one of the respondent teams included Nathan Zakheim, the son of the deceased mural artist.

17. The proposal to preserve the murals by removing them from Toland Hall and storing them until they can be reinstalled for public display either at Parnassus Heights or another UCSF location or another publicly accessible setting such as a museum has widespread public support, including from the purported owners of the murals (the GSA), Zakheim family members, preservationists, the City and County of San Francisco, acting through its Historic Preservation Commission and Board of Supervisors, and the greater community. As it is not feasible to preserve the murals in situ at Toland Hall, it is difficult to understand why anyone would oppose the effort to remove and preserve the murals.

18. As stated above, the Zakheim Mural removal began with design, conservation and planning in the first quarter of 2021 with removal and storage of the murals to be completed by the fourth quarter of 2021. Provided that the Zakheim Murals are successfully removed from Toland Hall and stored, UCSF will assemble a task force by the end of 2021, which will include a City representative, to advise on options for the display of the Zakheim Murals in a publicly accessible

setting, either on a UCSF campus or at a museum or other institution. Membership in the task force was recently announced to the public.

19. As indicated above, removal of the murals must precede demolition of UC Hall which must precede construction of the RAB. Any delay in removing the murals will have a ripple effect on these subsequent projects, delaying the ultimate completion of much needed state of the art research space at Parnassus Heights as well as causing substantial increases in construction costs for the RAB. In addition to these obvious harms to the University, any delay in completing the mural removal project which is currently underway would likely cause UCSF to lose the services of the world class team of conservators working on this project who would likely move on to other projects if this project is suspended because of an injunction, and there is no way of determining when UCSF would be able to finish the project with the selected expert team.

20. If the mural removal is enjoined until a hearing in January 2022, the work would effectively be delayed until April 2022 or later to ensure the end of the rainy season. An eight month delay in removing the murals and commencing demolition of UC Hall would delay the construction and opening of the RAB by this same period and likely result in increased RAB construction costs of at least $15M.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Executed on this _1_ day of September, 2021, at __San Francisco__, California.

DocuSigned by:
Brian Newman
E0A3EC621DCC4E5...

Brian Newman
Senior Associate Vice Chancellor, UCSF Real Estate & Vice President, UCSF Health

EXHIBIT 5

Charles R. Olson (SBN 130984)
Philip J. Sciranka (SBN 287932)
Carolyn J. Lee (SBN 294161)
LUBIN OLSON & NIEWIADOMSKI LLP
The Transamerica Pyramid
600 Montgomery Street, 14th Floor
San Francisco, California 94111
Telephone: (415) 981-0550
Facsimile: (415) 981-4343
colson@lubinolson.com
psciranka@lubinolson.com
clee@lubinolson.com

Anagha Dandekar Clifford (SBN 233806)
UNIVERSITY OF CALIFORNIA
Office of General Counsel
1111 Franklin Street, 8th Floor
Oakland, California 94607
Telephone: (510) 987-0356
Facsimile: (510) 987-9757
anagha.clifford@ucop.edu

Attorneys for Defendants/Respondents
THE BOARD OF REGENTS OF THE UNIVERSITY OF CALIFORNIA; UNIVERSITY OF CALIFORNIA; THE REGENTS OF THE UNIVERSITY OF CALIFORNIA

[Exempt From Filing Fee Government Code § 6103]

SUPERIOR COURT OF THE STATE OF CALIFORNIA

COUNTY OF ALAMEDA

PARNASSUS NEIGHBORHOOD COALITION; and CALVIN WELCH,

Plaintiffs/Petitioners,

v.

THE BOARD OF REGENTS OF THE UNIVERSITY OF CALIFORNIA; and DOES 1 through 10, inclusive,

Defendants/Respondents.

Case No. RG21088939
[Related Case Nos. RG21089332 and RG21090517]

ASSIGNED FOR ALL PRE-TRIAL PURPOSES TO JUDGE FRANK ROESCH, DEPT. 17

DECLARATION OF KEVIN BEAUCHAMP IN OPPOSITION TO PARNASSUS NEIGHBORHOOD COALITION, CALVIN WELCH AND YERBA BUENA NEIGHBORHOOD COALITION'S MOTIONS FOR PRELIMINARY INJUNCTION

Reservation Nos.: **R-2283377, R-2283371**
Date: September 16, 2021
Time: 3:30 p.m.
Dept.: 17

YERBA BUENA NEIGHBORHOOD CONSORTIUM, LLC, a subsidiary of the non-profit California corporation Tenants and Owners Development Corporation (TODCO), Petitioners, v. UNIVERSITY OF CALIFORNIA; THE REGENTS OF THE UNIVERSITY OF CALIFORNIA; and DOES 1 through 5, inclusive, Respondents.	Action Filed: February 19, 2021 Merits Hearing/Trial: January 14, 2022 Case No. RG21090517 [Related Case Nos. RG21089332 and RG21088939] ASSIGNED FOR ALL PRE-TRIAL PURPOSES TO JUDGE FRANK ROESCH, DEPT. 17 Action Filed: February 19, 2021 Merits Hearing/Trial: January 14, 2022

DECLARATION OF KEVIN BEAUCHAMP

I, Kevin Beauchamp, declare:

1. I am the Executive Director of Physical Planning at University of California, San Francisco ("UCSF"). I have held this position since January 2020; prior to that I was Director of Physical Planning. I have worked for UCSF in these capacities since 2002, although I began my career at UCSF as a planner in 1994. Prior to my time at UCSF, I was a planner at Environmental Science Associates.

2. I have personal knowledge of all of the matters stated herein, and, if called as a witness in this action, I could and would competently testify to those matters.

3. In my current position, I manage all physical planning for most of UCSF's campus sites (including Parnassus Heights) with the exception of San Francisco VA Medical Center, UCSF Fresno and UCSF Benioff Children's Hospital Oakland. UCSF owns approximately 9 million gross square feet ("gsf") of instruction, clinical, research, support, and housing space at approximately 12 sites in San Francisco and surrounding communities, and leases approximately 1.7 million gsf of additional space. UCSF is the City of San Francisco's second largest employer after the City itself, with over 26,000 employees.

4. I have worked on and/or supervised the preparation and implementation of UCSF's two most recent Long Range Development Plans ("LRDPs"), the 1996 LRDP and the 2014

LRDP. I was also directly involved in the planning and space needs assessments that led to the preparation of the Comprehensive Parnassus Heights Plan ("CPHP") at issue in this litigation.

5. The Parnassus Heights campus site is the oldest of the UCSF campus sites comprising approximately 107 acres of land in the mature Inner Sunset mixed-use neighborhood and adjacent to the Haight Ashbury and Cole Valley neighborhoods. UCSF's facilities are concentrated at the north end of the campus site. The 61-acre Mount Sutro Open Space Reserve occupies the central and southern portion of the campus site. Aldea Housing is surrounded by (but is not a part of) the Mount Sutro Reserve. Parnassus Heights houses five professional degree programs, wet and dry biomedical research laboratories and offices, instructional facilities, impatient and outpatient clinical facilities, housing, and other campus support space. UCSF's tertiary and quaternary adult acute care hospital, Moffitt (built in 1955) and Long Hospitals (built in 1982) are also located at Parnassus Heights. The facilities at Parnassus Heights are aging and the campus site as a whole lacks a cohesive identity. UCSF's investment in Parnassus Heights has not kept pace with its aging facilities or changes in programmatic need, resulting in infrastructure, buildings, and interior spaces that require substantial renewal and investment. Over the past approximately 15-20 years, most of UCSF's development efforts have focused solely on its Mission Bay campus site, to the detriment of Parnassus Heights. The goal of the CPHP is to address this situation and modernize Parnassus Heights.

6. Following the Regents of the University of California (the "Regents") approval of the 2014 LRDP, UCSF commenced and completed the CPHP, which provides a more detailed vision for the future of the Parnassus Heights campus site. An internal process for the CPHP included two years of stakeholder engagement, led by the Parnassus Master Plan Steering Committee, which was convened to oversee the preparation of the CPHP and met monthly to provide feedback and guidance. The steering committee included representatives with diverse perspectives from the professional schools, the Graduate Division, Academic Senate, UCSF Health, UCSF Real Estate, and University Relations, among others. Working Groups were also formed to look more closely at space for a Central Research Lab, research space more generally, educational space, and space for digital health/informatics. Other than the need to construct the

New Hospital by 2030, these planning efforts identified the need for expanded, modern research space as a primary need. In addition, in September 2018, UCSF released a survey to all UCSF employees for feedback and received over 1,800 responses and a research faculty survey focused on the programmatic needs of the research community garnered approximately 1,200 responses. Both of these surveys provided valuable input to the plan.

7. The CPHP contains master plan-level guidance for the overall physical environment at Parnassus Heights. It focuses on the configuration of building and open space areas and the major types of uses within buildings (e.g., inpatient, outpatient, research, instruction, support, housing, and parking), with special consideration of the adjacency of clinical, research, and instruction uses. Following the completion of this planning effort, it became apparent that UCSF could not meet the projected clinical and program needs at Parnassus Heights operating within the confines of the space ceiling imposed on the campus site in the 1976 Regents' Resolution.

8. Because the CPHP proposed to modify the Parnassus Heights development plan identified in the 2014 LRDP, an amendment of the 2014 LRDP ("LRDP Amendment No. 7") was proposed. This amendment would incorporate the CPHP's concepts and proposals into the 2014 LRDP, replacing portions of the Parnassus Heights chapter in the 2014 LRDP and making other necessary conforming changes. These proposed changes would include:

a. Revisions to functional zones;

b. Revisions to the space program;

c. Updates to the projected average daily population;

d. Revisions to the Regents' Resolution to increase the amount of space in non-residential buildings (known as the "space ceiling") to 5.05 million gsf and to modify the boundary of the Mount Sutro Open Space Reserve to accommodate the New Hospital while maintaining a minimum of 61 acres in the Reserve; and

e. Updates to the UCSF Greenhouse Gas Reduction Strategy.

The proposed 2014 LRDP, as amended by the CPHP, would become the primary planning document for Parnassus Heights and would guide the development of the Parnassus Heights

campus site through the next 30 years, or an approximate horizon year of 2050. All other UCSF campus sites addressed by the 2014 LRDP would continue to have an approximate horizon year of 2035.

9. LRDP Amendment No. 7 would increase the projected future space program at Parnassus Heights from 3.61 million gsf (excluding housing) in horizon year 2035 to approximately 5.05 million gsf (excluding housing) in horizon year 2050, a net increase of approximately 1.44 million gsf. When compared to the existing (2019) space developed at the campus site (approximately 3.68 million gsf, excluding housing), the LRDP amendment would result in a net increase in the space program by approximately 1.37 million gsf (excluding housing) by 2050. LRDP Amendment No. 7 would also result in an increase in the estimated average daily population from approximately 18,500 in horizon year 2035 to about 25,300 in horizon year 2050, a net increase of approximately 6,800. When compared to the existing (2018) average daily population at the campus site (approximately 17,400), the proposed LRDP amendment would result in a net increase in the average daily population by approximately 7,900 by 2050.

10. Planning for new and updated clinical facilities at UCSF began following the passage of SB 1953, which became effective on September 21, 1994. SB 1953 established a seismic safety buildings program under the California Office of Statewide Health Planning and Development's jurisdiction. SB 1953 required that all general acute care hospital facilities in California meet stringent seismic safety requirements by 2013 or 2030, depending on the physical condition of the hospital, in order to function as emergency centers following a major seismic event. Buildings that could not meet the deadlines needed to be decommissioned as in-patient hospital facilities.

11. In response to SB 1953, UCSF prepared a long term planning document as part of Amendment No. 2 to the 1996 LRDP, and prepared the 2005 Hospital Replacement EIR ("2005 EIR"). The 2005 EIR looked at replacing Moffitt Hospital at Parnassus Heights and the UCSF/Mount Zion Hospital by upgrading either hospital to meet the 2013 (for Mount Zion) and 2030 (for Moffit) seismic safety standards; however, neither hospital upgrade was deemed

feasible. The 2005 EIR analyzed the demolition of Moffitt Hospital and the development of up to 400 new hospital beds at two different locations on the Parnassus Heights campus site, including one site adjacent to Moffitt Hospital where the Langley Porter Psychiatric Institute ("LPPI") resides.

12. The 2005 planning effort was further refined in the 2008 LRDP Amendment No. 3 and 2008 Medical Center at Mission Bay EIR, which provided an update to the two-hospital plan and analyzed details regarding the plans for the new hospital at Mission Bay. The 2008 LRDP Amendment No. 3 summarized, "The Initial Phase ('LRDP Phase') of those recommendations, which were adopted in LRDP Amendment #2, are to: 1) develop three integrated specialty hospitals with about 210 beds at Mission Bay by 2012; 2) maintain tertiary and quaternary care with about 600 beds at Parnassus Heights for a total of about 810 beds during the LRDP phase; 3) provide ambulatory care facilities at both Parnassus Heights and Mission Bay; and 4) populate both sites with basic and translational disease oriented research programs."

13. Subsequently, the 2014 LRDP and 2014 LRDP EIR proposed and analyzed various changes at the Parnassus Heights campus site, including decommissioning Moffitt Hospital, and building a new Hospital of approximately 308,000 gsf with 140 beds at the LPPI site.

14. A community process to support the development of the CPHP began in mid-2018 by engaging thousands of neighbors, community leaders, merchants, city representatives, and staff through a multilingual survey, as well as working group meetings and three open houses. The re-envisioning comprehensively evaluated improvements to building design and functionality, public spaces and pedestrian connectivity, as well as vehicular traffic flow. The Community Working Group, comprising 24 members included community leaders, neighbors, merchants, city representatives, and UCSF staff and their process was organized in three phases;

a. "Discovery" Phase (May - September 2018) This phase focused on introducing the community to the CPHP concept and educating them on the process, as well as soliciting initial feedback from neighbors on potential campus improvements.

b. "Alternatives" Phase (October 2018-February 2019) During this phase, neighbors were presented with three plan options and gave feedback on the alternatives.

c. "Future Direction" Phase (March - June 2019) This phase focused on refining the plan and finalizing the Community Ideas Report, a document memorializing the community feedback received on the plan. The report identifies the six focus areas of housing, campus design, connectivity with nature, multi-modal mobility, public realm, and programs and amenities that benefit the neighborhood.

After concluding the first phase of the community engagement process, key stakeholders were identified to discuss potential impacts of the CPHP and neighborhood concerns. To facilitate this effort, the Advisory Committee on the Future of Parnassus Heights was formed, which comprises community leaders, neighbors, merchants, and city and non-profit representatives who live or work near the UCSF Parnassus Heights Campus.

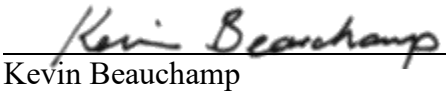
15. The two major nonresidential projects implementing the CPHP are the 870,000 gsf New Hospital and the 271,000 gsf RAB. Both are proposed to be developed on sites with extant buildings, UC Hall for the RAB and LPPI for the New Hospital. As the buildings to be demolished for these CPHP projects are very old, 1917 for UC Hall and 1941 for LPPI, actual hard demolition of these structures must be preceded by extensive abatement of hazardous materials and soft demolition, which is scheduled to take approximately 12 to 16 months. Abatement of hazardous materials and soft demolition work would be needed for both UC Hall and LPPI even under the prior 2014 LRDP proposals (which contemplated that UC Hall was to be retrofitted and repurposed for housing, and that LPPI would be demolished to make way for a smaller hospital on that site). Due to the dense development pattern on the 46-acre portion of the Parnassus Heights campus site that is not dedicated to the Mount Sutro Reserve and to Parnassus Heights' location surrounded by residential development, it is essential that demolition and construction projects at Parnassus Heights are coordinated and synchronized to ensure that they can be completed on schedule and on budget. This is particularly so with the unmet need for state of the art research space at Parnassus Heights to support the clinical activities and with the need to complete and open the New Hospital by 2030 because of SB 1953. Any delay in commencing the demolition of LPPI will have ripple effects on the subsequent construction projects, jeopardizing UCSF's ability to meet the statutory deadlines of SB 1953. In addition, as demolition of UC Hall

and commencement of construction of the RAB are scheduled to precede construction of the New Hospital, any delay in demolishing UC Hall will result in a much more substantial overlap of construction activities at Parnassus Heights than currently anticipated, which our CPHP planning efforts have been designed to minimize to the extent possible.

16. Other than the UC Hall Zakheim Murals removal project, the Integrated Center for Design and Construction at Parnassus Heights ("ICDC"), and abatement and soft demolition of UC Hall, no other projects would be underway by January 14, 2022, that rely on the CPHP EIR.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Executed on this 1st day of September, 2021, at San Francisco, California.



Kevin Beauchamp

EXHIBIT 6

DRAFT

UNIVERSITY OF CALIFORNIA SAN FRANCISCO – LAUREL HEIGHTS ENVIRONMENTAL IMPACT REPORT

Volume 1: Report

October 27, 1989

Prepared by:
Office of the Vice Chancellor
with assistance from
Environmental Science Associates, Inc.

University of California
San Francisco

II. PROJECT DESCRIPTION

A. PROJECT OBJECTIVES

GENERAL MISSION

To maintain UCSF's role as one of the leading academic health science institutions in the United States, UCSF must continue to have the physical facilities necessary to:

- recruit and retain highly qualified faculty members for teaching, research and patient care;
- continue to generate growth in basic science research programs, whose discoveries advance medical knowledge generally and allow UCSF health care providers to offer patients the most advanced techniques available for diagnosis and treatment; and
- provide the research experiences necessary to offer the highest quality of training to health science graduate and professional students.

The public benefits generally from UCSF's role in advancing the current understanding of human health, aging, and disease. Californians and others, nationally and internationally, benefit directly from the application of the expertise of UCSF's faculty to research and patient care and the education of students. As a regional referral center for the western United States, the UCSF Medical Center offers its patients access to care that incorporates the latest research developments. The availability of such state-of-the art patient care is made possible by the high level of research productivity and on-going discoveries continually being made by UCSF researcher and their staff and students. The research programs at UCSF also provide an exemplary setting for the education of graduate professional students, medical students and residents, many of whom will later practice in California.

PROJECT PLANNING BACKGROUND

Evolution of Space Constraints

In 1976, The Regents responded to community concerns over UCSF success and corresponding growth at Parnassus Heights by enacting an amendment to the

1976 Long Range Development Plan (*LRDP*) that established floor area and population limitations for Parnassus Heights. The *LRDP* amendment set a ceiling of 3.55 million gross square feet for development at Parnassus Heights, limited the daily campus population at Parnassus Heights to 13,427 persons, and precluded campus boundary expansion into the Parnassus Heights neighborhood. As a result of these Parnassus Heights space constraints, UCSF must seek locations off Parnassus Heights to fulfill any unmet needs for additional academic space. For further discussion of the 1976 *LRDP* amendment and it effects on UCSF academic planning and programs, see Chapter III, Section A, University Plans and Policies.

Functional Needs for Space

While the requirements for office and classroom teaching space per faculty member have remained stable over time, changes in research methods in the biomedical sciences have escalated the space needs of faculty members. For example, space intensive computerized equipment is now frequently used for examining molecular structures in order to design potential new drugs.

Additional space is essential both to recruit new faculty who are pioneering new techniques and to retain faculty who have created research programs that now need room for reasonable growth. Further, to capitalize on the new understandings and possibilities created by current research, additional faculty must be recruited in fields that have not previously existed. In 1980, for example, no one could have foreseen the explosion in both research and patient care in response to the AIDS epidemic.

Adequate space must be developed to support academic programs and related faculty recruitments that cannot be predicted today, but are likely to flow from rapid advances in molecular biology, genetics, and immunology. UCSF's leadership role in the biochemical sciences gives UCSF both the opportunity and the obligation to apply its expertise to advances in research and to the education of graduate students in the health science fields. With that obligation goes the need to marshal the necessary physical facilities to support those teaching and research activities.

Periodically, UCSF prepares a *Long Range Development Plan (LRDP)*, which is a general land use plan based upon the academic goals and objectives of UCSF. The 1982 *LRDP* confirmed the physical space constraints associated with further

development at Parnassus Heights. Parnassus Heights is currently the most densely developed of the University of California campuses, and is operating within the space and population constraints discussed above that were established in 1976 (following adoption of the 1976 *LRDP*) and confirmed in the 1982 *LRDP* (both *LRDP*s, as well as their accompanying EIRs, are incorporated herein by reference). With the completion of the new medical library, UCSF will be close to the limitation on total square footage adopted for Parnassus Heights by The Regents in 1976. UCSF cannot undertake construction of new biomedical research facilities and related teaching and administration and support service space at Parnassus Heights without demolishing other facilities that are essential to its overall academic programs.

The 1982 *LRDP* noted that research space limitations would be one of the primary challenges that UCSF would face during the 1980s: The present era of unparalleled program growth in both basic and applied research, with discoveries multiplying and feeding one another, has produced breakthroughs of fundamental importance for human health and well-being. These breakthroughs require expanded research facilities and significant curricular revisions. Current space constraints limit campus ability to respond to research opportunities and curricular changes. The very success of our multidisciplinary efforts triggers a multiplier impact upon needs. New technologies, such as those involving computer systems, radiation applications and germ-free rooms, demand configurations of facilities never imagined a few years ago.

In sum, the *LRDP* concluded that the combination of inadequate existing space, space limitations at Parnassus Heights, and the need for space to accommodate expansion and new programs requires that UCSF expand its research capacity to maintain the quality of research at UCSF.

Decentralization

Both the 1976 and 1982 *LRDP*s recognized the problems created by space constraints on the Parnassus Heights site, and included the policy of relocating those programs that could operate effectively at some distance from the Parnassus Heights site to other sites (not within the Parnassus Heights area or the Parnassus Heights site space constraint described above). Pursuant to this policy of decentralization, the space released by relocation of Parnassus Heights activities can then be reallocated for programs that, by their nature, should remain on the Parnassus site.

Decentralization has disadvantages in that it requires duplication of certain services and equipment, increases the costs of transportation, and interferes with academic interaction necessary due to the links between research programs, patient care activities, instructional activities and student and administrative/support services. For these reasons, both the 1976 and 1982 *LRDP*s contemplated that the primary candidates for relocation to other sites would be those administrative and support activities that could feasibly be separated from the main site. Since the 1976 *LRDP* was adopted, the goal of decentralization has been largely realized for administrative uses. As a result of the University's implementation of the policy of decentralization established in the 1976 *LRDP*, there remain only approximately 50,000 gross square feet of space devoted to what may generally be described as campus administration remaining on the Parnassus Heights site. As these administrative uses provide essential campuswide services (for example, student financial aid), they could not operate effectively at a distance from the main Parnassus Heights site.

Programmatic Needs

Concurrent with space limitations at the Parnassus Heights site, the University is experiencing a need for research expansion space because of medical technological advances and health care crises such as those mentioned above. As examples, over 200 investigators at UCSF are working on different aspects of AIDS research and treatment; advances in neurobiology give new information on the molecular and cellular structures and operation of the brain, and this research shows potential for finding the genetic and chemical bases for Alzheimer's disease, depression, schizophrenia, and multiple sclerosis; other research shows promise in work on Tay-Sachs disease and sickle cell anemia.

The 1982 *LRDP* recognized that the "rapid growth of new technology and newly developed drug distribution systems has demanded an expansion" of the School of Pharmacy and its role in health care developments. The *LRPD* noted several areas in which the basic research efforts of the School of Pharmacy have been active, including the following:

- quantifying changes in drug activity caused by altered disease states;
- designing new, more powerful drugs that lack unwanted side effects;
- studying drugs used in kidney transplants and problems affecting arthritis patients; and

- investigating drugs that could effectively fight cancer while leaving healthy cells free of toxic impact.

Indeed, the UCSF School of Pharmacy receives the highest level of federal medical and health care research funding of any such school, and new research opportunities are continuously presented. The School of Pharmacy is the number one ranked such school with respect to the quality of its pharmaceutically related research efforts in the United States (Pharmaceutical Chemistry Program Review Committee, 1982)[1].

The 1982 *LRDP* concluded that the combination of inadequate existing space, space limitations at Parnassus Heights, and the need for space to accommodate expanding and new research programs means that new space must be found in order to maintain the quality of faculty and research at UCSF.

PROJECT OBJECTIVES

UCSF has proposed the Laurel Heights project in order to accomplish a number of objectives that stem from both Parnassus Heights space limitations and escalating research needs. These objectives are as follows:

1. Expand biomedical research facilities.
2. Release critically needed space for research at the Parnassus Heights site.
3. Consolidate and reduce congestion experienced by the School of Pharmacy and its basic science programs to promote a more effective use of space and research resources.

Performance Criteria

The Academic Planning Board, UCSF's primary academic planning body, developed and adopted a list of criteria for evaluating the ability of the Laurel Heights project and the various alternatives to meet the project objectives. These criteria, with a brief explanation of each one, are listed below.

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[1] Citations in the text of this document are in an abbreviated format. Full references are included at the end of each section.

EXHIBIT 7

8/Grant

Appendix O-SM

ORIGINAL

No. S027252
(Court of Appeal Nos. A052852 and A052853)
(S.F. Super. Ct. Nos. 862850 and 920851)

IN THE SUPREME COURT OF THE STATE OF CALIFORNIA

LAUREL HEIGHTS IMPROVEMENT ASSOCIATION OF SAN FRANCISCO, INC.,

Appellant,

vs.

REGENTS OF THE UNIVERSITY OF CALIFORNIA,

Respondent.

Appeal from the Judgment and Orders of
the Superior Court of California,
City and County of San Francisco
(Honorable Ira A. Brown, Jr., Judge
and Honorable Carol Yaggy, Judge Pro Tem)

RESPONDENT'S REPLY BRIEF

JAMES E. HOLST
JOHN F. LUNDBERG
OFFICE OF THE GENERAL COUNSEL
THE REGENTS OF THE UNIVERSITY
OF CALIFORNIA
300 Lakeside Drive
Oakland, California 94612-3565
Telephone: 415/987-9800

JEROME B. FALK, JR.
ETHAN P. SCHULMAN
HOWARD, RICE, NEMEROVSKI, CANADY,
ROBERTSON & FALK
A Professional Corporation
Three Embarcadero Center, 7th Floor
San Francisco, California 94111
Telephone: 415/434-1600

Attorneys for Respondent
The Regents of the University of California

No. S027252
(Court of Appeal Nos. A052852 and A052853)
(S.F. Super. Ct. Nos. 862850 and 920851)

IN THE SUPREME COURT OF THE STATE OF CALIFORNIA

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JAMES E. HOLST
JOHN F. LUNDBERG
OFFICE OF THE GENERAL COUNSEL
THE REGENTS OF THE UNIVERSITY
OF CALIFORNIA
300 Lakeside Drive
Oakland, California 94612-3565
Telephone: 415/987-9800

JEROME B. FALK, JR.
ETHAN P. SCHULMAN
HOWARD, RICE, NEMEROVSKI, CANADY,
ROBERTSON & FALK
A Professional Corporation
Three Embarcadero Center, 7th Floor
San Francisco, California 94111
Telephone: 415/434-1600

Attorneys for Respondent
The Regents of the University of California

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INTRODUCTION AND SUMMARY OF ARGUMENT

When a public agency or private developer responds to comments on a draft EIR by providing any new information or making any revisions to the text, it must address the issue of whether it is necessary to recirculate for a new round of public comment. The issue is one of considerable consequence, for recirculation inevitably will add cost and significantly delay the project. It is critical that there be a comprehensible, clear standard that agencies, parties and their advisors acting in good faith can understand and apply.

Nowhere in its fifty-page brief does the Association articulate a workable legal standard that would allow this Court—or the numerous public agencies and courts that will face the issue in the future—to determine when the statutory threshold of "significant new information" warranting recirculation has been met. Instead, the Association maintains that the determination of whether significant new information is not susceptible to an articulable standard, but can only be made on a case-by-case basis. Appellant's Answer Brief on the Merits ("Assoc. Br.") at 28. Alternatively, it contends that significant new information should include *any* information that "relates to" a project's potentially significant impacts, alternatives or mitigation measures. *Id.* It even asserts that recirculation is required whenever there is evidence to support "an argument that there *could* be *potentially* significant effects not already considered." *Id.* at 41 (emphasis added). In short, to the Association "significant new information" means virtually any information at all.

The Association's vague, standardless approach is inconsistent with the legislative history of Section 21092.1 and the body of case law applying a closely analogous statute, Section 21166; it fails to provide any guidance to public agencies and courts that will be faced with recirculation claims in the future; and it will encourage additional litigation by project opponents, resulting in costly project delays. The statute was meant to impose the clear and workable standard articulated in Guidelines §15162: recirculation is required where the final EIR reveals (1) a new adverse impact; (2) a more severe adverse impact; (3) a change in the project that will require important revisions to the EIR because of significant adverse impacts not previously considered; or (4) mitigation measures or alternatives not previously considered (or previously found infeasible) which would substantially reduce a significant adverse effect. Unlike the position advanced by the Association, this interpretation is based directly on the detailed Guideline promulgated by the Secretary of Resources under an analogous statute and the cases applying that Guideline; it is consistent with the legislative history of Section 21092.1 and with analogous federal law; it would provide a measure of certainty and predictability for public agencies attempting to comply with CEQA;

and, most importantly, is the *only* interpretation suggested by any party that makes sense and is workable. *See* Part I, *infra*.

The Association similarly fails to propose any sensible standard of review to govern judicial review of an agency's determination that the statutory threshold has not been met. Instead, it suggests that an EIR *must* be recirculated any time there is a "fair argument" that there is new information regarding a *potentially* adverse impact. Assoc. Br. at 17, 33, 47. That proposed standard is inconsistent with the substantial evidence rule, which courts routinely apply in CEQA cases in reviewing agency decisions not to prepare subsequent or supplemental EIRs—decisions that are directly comparable to the decision not to recirculate involved here. Even more importantly, it would make recirculation the rule, rather than the exception. For these reasons, a reviewing court must uphold an agency's decision not to require recirculation if there is substantial evidence to support a determination that any new information in the final EIR was not significant. *See* Part II, *infra*.

The Association's argument that even under the standard urged by the Regents, the Final EIR in this case contained "significant new information" that required it to be recirculated cannot be sustained. The Association makes two contentions: that the Final EIR worked a "fundamental revision of the analysis of the significant noise impact"; and that it contained changes in the project that "significantly increased adverse impacts." Assoc. Br. at 1. The Association's claims are, quite simply, false. The Final EIR merely added some additional information requested by the public regarding noise impacts, but without disturbing either the structure of the Draft EIR or altering its overall conclusion—adopted by the Board of Regents—that those impacts would be *insignificant*. A virtually identical treatment of noise impacts in the first Laurel Heights EIR, based on far less detailed information, was expressly upheld by this Court in *Laurel Heights I*. *See* Part III(A), *infra*. Moreover, no information in the Final EIR "increased" *any* impact, much less a significant one. To the contrary, as to each of the subjects addressed in the Association's brief, the information in the Final EIR merely confirmed, clarified or amplified the information contained and conclusions reached in the Draft EIR. *See* Parts III(B)-(E), *infra*.

Pervading the Association's discussion are the claims that the Draft EIR's discussion of key environmental issues was somehow inadequate to alert the public to the environmental issues raised by the project, and that the University deliberately "withheld" the new information from the public until the Final EIR was published. No such conclusion was reached by the Court of Appeal, and nothing could be further from the truth. The Draft EIR contained an extraordinarily lengthy and detailed discussion of each of the issues about which

the Association now professes concern; in virtually every instance, the additional information was generated and added to the Final EIR in response to requests by the Association and the public; and *none of that information changed the conclusions that had been reached in the Draft EIR*. Under any standard of review, the Association's claim that the Final EIR contained significant new information requiring recirculation must be rejected.

ARGUMENT

I.

APPELLANT HAS FAILED TO OFFER A WORKABLE STANDARD THAT WOULD ALLOW PUBLIC AGENCIES AND THE COURTS TO DETERMINE WHETHER AN ENVIRONMENTAL IMPACT REPORT CONTAINS "SIGNIFICANT NEW INFORMATION" WARRANTING RECIRCULATION.

Section 21092.1 of the Public Resources Code provides that an EIR should be recirculated for additional public comment if it contains "significant new information." Neither the statute nor the State CEQA Guidelines, which implement CEQA and are entitled to great weight, directly defines the quoted terms, thereby giving rise to the central issue on this appeal. As shown in our opening brief, Section 21092.1 should be construed in harmony with a directly comparable section of CEQA, which requires that a subsequent or supplemental EIR be prepared if "new information," unknown at the time the EIR was certified, becomes available thereafter. Respondent's Opening Brief ("Regents' Op. Br.") at 12-16. The requirement as originally enacted by the Legislature was somewhat ambiguous, for "new information" was undefined in CEQA. However, the State CEQA Guidelines clarified the situation by defining "new information" as that which shows either that "[t]he project will have one or more significant [*i.e.*, adverse] effects not discussed previously in the EIR," or that "[s]ignificant effects previously examined will be substantially more severe than shown in the [draft] EIR." GUIDELINES §15162(a)(3)(B)(1), (2); *see* Regents' Op. Br. at 12-13.[1]

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[1]The Guidelines also provide that a supplemental or subsequent ~~EIR~~ should be prepared if changes are proposed in the project or "[s]ubstantial changes occur with respect to the circumstances under which the project is undertaken" which will require "important revisions" of the previous EIR "due to the involvement of new significant environmental impacts" not considered in the previous EIR (GUIDELINES §15162(a)(2)); or if the "new information" shows either that:

"Mitigation measures or alternatives previously found not to be feasible would in fact be feasible and would substantially reduce one or more significant effects of the

(continued...)

As was the case in the Superior Court and the Court of Appeal, the Association has again failed to offer any articulable standard that could feasibly replace the clear language of this directly analogous Guideline.[2] To the contrary, the Association goes so far as to actually question this Court's authority to construe the statutory language, suggesting that task is more appropriately undertaken by the Secretary for Resources. *See* Assoc. Br. at 3-4.[3] The Association overlooks the fundamental principle that statutory construction is ultimately the responsibility of the judiciary, not the executive branch. *E.g., Oakland Raiders v. City of Berkeley*, 65 Cal. App. 3d 623, 629 (1976). While the contemporaneous administrative construction of a statute is entitled to substantial weight in determining legislative intent (*e.g., Department of Health Services v. Superior Court*, 232 Cal. App. 3d 776, 782 (1991)), the courts must construe a statute in a proper case—particularly where the administrative agency responsible for implementing the statute has failed to clarify ambiguous statutory language.[4]

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[1](...continued)
project; or

> "Mitigation measures or alternatives which were not previously considered in the EIR would substantially lessen one or more significant effects on the environment." (*Id.* §15162(a)(3)(B)(3), (4))

None of these categories is remotely applicable here.

[2]Although the recirculation issue has been the central issue in this case since the Association challenged the adequacy of the new EIR, the Association also failed in both lower courts to offer any coherent formulation of the legal standard that it would have had those courts apply.

The Court of Appeal did no better at defining the standard for measuring "significant new information," holding only that the Final EIR should have been recirculated because it believed that certain information in that document was "significant enough to be revealed and commented on by the public." Slip op. at 11; *see also id.* at 12 ("on balance the FEIR contained new information of such significance as to warrant recirculation for the proper public role of commenting on the environmental impact of the project"). This is singularly unhelpful: it provides no standard at all that could be applied, with any reasonable degree of confidence, by agencies, private parties or reviewing courts.

[3]The Association challenges the Court's authority to construe the statute even more explicitly in its Response to Amicus Curiae Brief of Pacific Legal Foundation ("PLF Resp."). There, the Association notes correctly that "the Legislature did not heed the recommendation of the bar committee that an attempt be made to clarify what is significant new information." PLF Resp. at 15. The Association strongly implies that for this reason, this Court may not do so either:

> "Thus, in requesting further clarification of the §21092.1 standard, [amicus] asks the Court to do what the Legislature declined to do. Also, the adoption of guidelines further explicating statutory requirements is the function of the Secretary for Resources." (*Id.*)

[4]The most recent comprehensive version of the State CEQA Guidelines was promulgated by the Secretary for Resources in June 1986, two years after the enactment of Section 21092.1. There is no Guideline expressly defining the term "significant new information" as used in that statute. It may well be, of course, that the Resources Agency believed that Guidelines §15162 provided all
(continued...)

Rather than propose an alternative standard, the Association insists that "[t]he determination of whether new information is significant . . . is not subject to an 'iron clad' definition, but must be determined on a case by case basis." Assoc. Br. at 28. Despite this disclaimer, the Association goes on to offer a veritable laundry list of examples that, in its view, *would* fall within the statute. Thus, the Association would find "significant new information," and hence require recirculation, if the information is "highly pertinent to the Draft EIR's conclusions." *Id.* at 3. Further, in its view recirculation would be required if *any* of the following were contained in a final EIR:

> "a fundamentally reorganized analysis of a potentially significant effect; information which *significantly* changes a project or increases its adverse impacts; information effecting *substantial* revisions in an EIR; *important* additional details, *more elaborate* discussions or *important* new or updated figures concerning potentially significant effects; and a discussion of a new alternative which meets basic project criteria." (*Id.* at 4 (emphasis added))

Elsewhere, the Association offers an even broader formulation, suggesting that "[n]ew information can be significant because it *relates to potentially* significant impacts, alternatives or mitigation measures, . . . or raises *important new issues* about the analyses or conclusions presented in the Draft EIR." *Id.* at 28 (emphasis added). Finally, it claims that recirculation is compelled if a project opponent offers any evidence to support a claim that there "could be" potentially significant effects not already discussed. *Id.* at 41, 46, 47.

The Association's proposed "standard" amounts to no standard at all. As the emphasized language indicates, it hardly advances the analysis to merely repeat the word "significant," or to substitute for it "important," "substantial" or "more elaborate." More importantly, the Association apparently would set the threshold so low that recirculation would be required any time new information "relates to potentially significant impacts, alternatives or mitigation measures," or a "fair argument" can be made that there "could be" such impacts. *Id.* at 28. Since, by definition, virtually *any* new information concerning a project would "relate to" one or more of these principal elements of an EIR, the Association thus would make recirculation the rule, rather than the exception. As shown in the following sections, that broad a reading of CEQA would be inconsistent with the statutory scheme as a whole, and with the legislative history of Section 21092.1 in

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[4](...continued)
the guidance necessary in light of the several judicial decisions which looked to Section 21166 and Guidelines §15162 in applying Section 21092. *See* Regents' Op. Br. at 13-14.

particular; would depart dramatically from the standard under analogous federal law; and would impose serious costs on public projects subject to environmental review, with no offsetting public benefit.

A. Section 21092.1 Should Be Construed In Harmony With Section 21166 Of The Public Resources Code.

The Association insists that by suggesting that the Court look to Section 21166 for guidance in construing Section 21092.1, the University is asking the Court "to amend §21092.1 by judicial fiat." Assoc. Br. at 3. That worn-out cliche is the last refuge of those who will not understand that the proper role of courts is to interpret statutes. The Association's argument ignores basic principles of statutory construction that require the two statutes to be construed in harmony with each other; it is also inconsistent with the substantial body of cases that have looked to Section 21166 and the implementing Guideline in determining whether recirculation is warranted and with the legislative history of Section 21092.1. *See* Regents' Op. Br. at 13-19. Finally, the Association does not offer any persuasive reason to construe Section 21092.1, which applies when "significant new information" arises before certification of an EIR, any differently than Section 21166, which applies when "new information" arises *after* certification of an EIR.

First, as the Association itself recognizes (Assoc. Br. at 4), Section 21092.1 should be construed with reference to CEQA, of which it forms a part, so that the entire statutory scheme may be harmonized. Both Section 21092.1 and Section 21166 address the same issue, in virtually the same language: when "new information" should warrant reopening (or extending) the environmental review process for further public comment. They therefore should be construed in harmony with each other.

Second, the legislative history of Section 21092.1 directly supports a consistent reading of the two statutes. As the Association concedes (Assoc. Br. at 18, 35-36), in enacting Section 21092.1, the Legislature intended to codify the holding in *Sutter Sensible Planning, Inc. v. Board of Supervisors*, 122 Cal. App. 3d 813 (1981). As the majority below correctly observed (slip op. at 8) and as the Association concedes (Assoc. Br. at 18), the court in that case explicitly looked to the three Section 21166 standards in determining the recirculation issue presented by that case. *See Sutter Sensible Planning*, 122 Cal. App. 3d at 821-22. As we showed in our opening brief (Regents' Op. Br. at 16-18), the State Bar Committee explicitly recommended that the Legislature codify the holding of *Sutter Sensible Planning*, and the Legislature adopted that recommendation. It follows that the

Legislature must have approved of the *Sutter Sensible Planning* court's reliance on the standards set forth in Section 21166.[5]

Third, despite the Association's attempt to distinguish these cases on their facts (Assoc. Br. at 24-25), numerous other appellate courts since *Sutter Sensible Planning* have looked to the standards set forth in Section 21166 and its implementing Guideline to determine whether recirculation of a final EIR is warranted, even where the new information arose before certification. For example, in *Mira Monte Homeowners Ass'n v. County of Ventura,* 165 Cal. App. 3d 357 (1985), four days prior to a hearing on an EIR for a proposed subdivision it was discovered that one of the streets in the development would encroach into a fragile wetland area containing rare plant species. *Id.* at 360-61. The EIR had been prepared on the assumption that the development would *not* invade the wetlands. *Id.* at 360. Nevertheless, the county's board of supervisors certified the EIR as complete and imposed additional conditions of tentative map approval, which had been developed since the discovery of the encroachment. *Id.* at 361.

The Court of Appeal treated the issue presented by the case as whether the board of supervisors had abused its discretion by certifying the EIR as complete without first preparing a subsequent or supplemental EIR. *Id.* at 362. Even though the new information had been discovered *before* certification of the EIR, the court looked to Section 21166 and its implementing Guideline to evaluate

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[5]A recent amendment to CEQA provides further support for this conclusion. During 1992, the Legislature enacted Assembly Bill 3078 (Sher), which amended Section 21083.3 of the Public Resources Code. Before its amendment, that statute provided that once an EIR had been prepared and certified for a general plan, CEQA review of a residential development project consistent with such a plan "shall be limited to effects on the environment which are peculiar to the parcel or to the project and which were not addressed as significant effects in the prior environmental impact report." §21083.3(b) (1991).

Assembly Bill 3078 broadened Section 21083.3 to apply to all development projects, rather than only residential development projects. At the same time, the Legislature added language to the statute that essentially codifies the Guidelines standard for preparation of subsequent or supplemental EIRs:

> "If a development project is consistent with the general plan of a local agency and an environmental impact report was certified with respect to that general plan, the application of this division to the approval of that development project shall be limited to effects on the environment which are peculiar to the parcel or to the project and which were not addressed as significant effects in the prior environmental impact report, *or which substantial new information shows will be more significant than described in the prior environmental impact report.*" (*Id.* §21083.3(b) (emphasis added))

Thus, unless substantial new information shows that a project will have new or more significant environmental effects than previously recognized, no project-specific EIR need be prepared once a general plan EIR has been certified. That is precisely parallel to the standard established by Section 21166 and Guidelines §15162.

that issue. *Id.* at 362-63. The court held that the newly discovered encroachment involved a "substantial change in circumstances" within the meaning of Section 21166, both because it "meant that the significant impact upon the wetlands would be more severe than previously recognized by the EIR," and because it involved a "new significant effect." *Id.* at 363-64. In light of that conclusion, the court concluded the proper procedure upon discovery of the encroachment should have been "further environmental evaluation by way of a subsequent or supplemental report prior to any project approval." *Id.* at 364-65. The court relied particularly on Section 21068, which defines "significant effect on the environment" as "a substantial, or potentially substantial, *adverse* change in the environment." §21068 (emphasis added).[6] *See also, e.g., Marin Mun. Water Dist. v. KG Land California Corp.*, 235 Cal. App. 3d 1652, 1666-68 (1991) (after the preparation of a draft EIR regarding a water district's proposed moratorium on new service connections pending the development of new water supplies, the district's water supply master plan, which made it clear that probable duration of the moratorium would be 10 years or more, was completed and made available to the public; recirculation was not required, since the draft EIR stated that the moratorium was for an extended but indefinite period and considered the potential impacts if the moratorium lasted for more than 5 or 6 years); *Sierra Club v. Gilroy City Council*, 222 Cal. App. 3d 30 (1990) (after publication of a draft EIR for a residential development project, the California Tiger Salamander was discovered on the site, and the city commissioned a written report containing the salamander that proposed additional mitigation measures; preparation of a new EIR was not required, since the public had an opportunity to comment on the final EIR before it was certified).

Fourth, by the time the Legislature enacted Section 21092.1, the phrase "new information" in Section 21166 had been construed both judicially and administratively to mean new information revealing new or more severe adverse impacts. *See* Regents' Op. Br. at 12-16. This creates a strong presumption—which the Association fails even to discuss, let alone refute—that the comparable words of Section 21092.1 were intended by the Legislature to have the same meaning.[7]

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[6]The Association attempts to distinguish *Mira Monte* on the ground that "the original EIR had not already been revised to include the new analysis." Assoc. Br. at 24. That does not change the fact that the *Mira Monte* court looked to Section 21166 even though the new information arose *before* certification, and even though the court could have ordered the board of supervisors to recirculate the final EIR together with the testimony regarding the encroachment and the newly developed conditions.

[7]The only material difference in terminology between the two statutes is that Section 21092.1 further qualifies "new information" by requiring it to be "significant." That hardly suggests that (continued...)

B. The University's Proposed Standard Is Consistent With The Federal Standard Under NEPA For Supplementation Of Environmental Impact Statements.

As shown in our opening brief, the *Sutter Sensible Planning* court explicitly relied on federal cases under the National Environmental Policy Act ("NEPA") in its discussion of the circumstances under which recirculation is appropriate, and the State Bar Committee expressly approved that reliance in recommending that the Legislature codify the court's holding in Section 21092.1. Regents' Op. Br. at 17-20. The NEPA standard, like the parallel standard embodied in Section 21092.1, requires the preparation of a supplement to either a draft or final environmental impact statement if there are "significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts." 40 C.F.R. §1502.9(c). As the Association acknowledges (Assoc. Br. at 35), under this standard, as incorporated into CEQA, "recirculation is not required where the supplement merely *clarifies or amplifies*, or makes insignificant modifications in, *an adequate EIR*." *Sutter Sensible Planning*, 122 Cal. App. 3d at 822-23 (citation omitted; emphasis added).

Relying on a number of district court and Court of Appeals decisions, the Association argues that NEPA requires recirculation (in the form of preparation of supplements to EIS's) whenever new information "effects a fundamental reorganization of the analysis used in the draft EIR, indicates that the prior analysis was inadequate, or discloses the true nature of the proposed project." Assoc. Br. at 40. As shown in Part III, *infra*, however, none of these categories applies here. Moreover, all of the cases upon which the Association relies were decided well in advance of the United States Supreme Court's 1989 decision in *Marsh v. Oregon Natural Resources Council*, 490 U.S. 360 (1989), which upheld an agency's decision not to require a supplemental environmental impact statement to address new information developed after the completion of the original EIR. In reaching that conclusion, the Court held that "if the new information is sufficient to show that the remaining action will 'affec[t] the quality of the human environment' *in a significant manner or to a significant extent not already considered*, a supplemental EIS must be prepared." *Id.* at 374 (footnote

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it was intended to have a *broader* meaning than "new information" as used in Section 21166. But that is necessarily what the Association now claims–*i.e.*, that the term "*significant* new information" is a broader, more inclusive term of art than "new information." If the difference in terminology had any meaning at all, it could be the opposite, with "significant new information" being a *narrower*, not broader, category than "new information."

omitted; emphasis added). The Court's overall approach to the issue under NEPA thus is entirely consistent with the standard proposed by the University here.

C. Appellant's Vague "Standard" Would Make Recirculation The Rule Rather Than The Exception, And Would Impose Substantial Costs On Public Projects Without Any Corresponding Public Benefit.

If the Court were to adopt the Association's view that "significant new information" means any information that "relates to" a project's "potentially significant" impacts, alternatives or mitigation measures (Assoc. Br. at 28), recirculation would become the rule rather than the exception. By definition, nearly *any* information would fall within one or more of those extremely broad categories. As a result, virtually every public (or private) project could be delayed, and made more costly, by project opponents who could readily force responsible agencies to recirculate a final EIR merely by the expedient of requesting additional information—whether or not that information showed that the project would have more severe impacts than those previously disclosed in draft —or by claiming that there were feasible project alternatives or mitigation measures not previously considered that could reduce the project's environmental impacts. The recirculated "final" EIR which responded to such comments, in turn, would itself become vulnerable to the very same tactic, with the ultimate result that agencies' consideration of public projects and the projects themselves would be delayed, and the costs of the environmental review process, and of financing and constructing development projects, would soar.

In short, the Association's standard would insure the very outcome that even the Court of Appeal majority below foresaw:

> "[S]uch a low standard would posit a cycle of recirculation, new comment, and new circulation, leading to endless delay. . . . The raison d'etre of an FEIR is to provide additional information in response to public comment on the draft. *If any new information is 'significant information,' virtually any FEIR would have to be recirculated;* to thus require recirculation for reconsideration of any new information would punish a project proponent for being environmentally responsible. If a proponent responded with new information, a challenger would cry foul and seek recirculation; if a proponent sensed this hurdle and said little, the challenger would again cry foul and complain of incompleteness." (Slip op. at 9-10 (emphasis added))

As Justice Low observed in his separate opinion, such a standard would "render environmental litigation an endless chess match, a cycle of move and

countermove, with no conceivable end in sight." *Id.*, slip op. at 3 (Low, Acting P.J., dissenting).

These observations are particularly apropos to this litigation. Over the past six years, the Association's unalterable opposition to the University's use of its Laurel Heights property has led it to file three separate lawsuits, giving rise to a full trial, countless pretrial motions and petitions for writ of mandate before the Superior Court and the Court of Appeal, multiple Court of Appeal opinions, several petitions for review, and two full appeals on the merits before this Court.[8] In light of this background, the Association's contention that this case could have been long since resolved had the University simply agreed to recirculate the Final EIR is preposterous. Assoc. Br. at 29. Had the University recirculated the Final EIR, the Association undoubtedly would have responded with a new round of voluminous comments and requests for information; and, when the University responded to those comments in good faith before certifying the Final EIR, the Association would have been in a position to make the same claim it has advanced here—namely, that the responses constituted "significant new information" requiring yet another recirculation and opportunity for further comment.

II.

THE COURTS SHOULD DEFER TO AN AGENCY'S DECISION NOT TO REQUIRE RECIRCULATION IF THERE IS SUBSTANTIAL EVIDENCE TO SUPPORT A DETERMINATION THAT ANY NEW INFORMATION IN THE FINAL EIR WAS NOT SIGNIFICANT.

Once an agency has decided not to recirculate a final EIR, its determination should be upheld if there is substantial evidence to support its determination that the Final EIR did not contain "significant new information." That standard is entirely consistent with the substantial evidence standard applied by courts in reviewing agency determinations not to require subsequent EIRs. *See* Regents' Op. Br. at 24 and authorities cited.[9]

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[8]Most recently, this Court denied the Association's petition for review of the Court of Appeal's unpublished decision rejecting its claims for "estoppel" against the University in connection with its acquisition of the Laurel Heights property in 1985. No. S029099. In that decision, which is now res judicata, the Court of Appeal rejected various claims that the Association now attempts to reargue in its brief to this Court. For example, the Association's heavy reliance on local zoning ordinances (Assoc. Br. at 5) ignores the Court of Appeal's conclusion in that case—citing its own opinion in a previous case brought by the Association, which is also final—that such local ordinances do not apply to the University of California.

[9]The Association erroneously implies that *Mira Monte*, 165 Cal. App. 3d 357, rejects the substantial evidence standard, arguing that it is "better reasoned than those decisions in which (continued...)

The Association offers no justification for a different standard of review depending on whether the "new information" was developed before or after certification of the EIR. In either case, the agency must examine the existing environmental document and consider the significance of the additional information in that context. There may be conflicting opinions or information regarding the consequences of the additional information which in either case the agency must evaluate. There are no intrinsic differences between the agency's process and evaluation when undertaken before as opposed to following certification. All of the reasons justifying use of the substantial evidence standard in the post-certification context apply with equal force to the case where additional information is developed after circulation of the draft EIR and prior to certification. *See id.* at 24-25.

The Association argues for extension of the "fair argument" standard applicable to review of an agency's decision that a negative declaration may be prepared rather than an EIR. Assoc. Br. at 17, 33, 47. But it makes no attempt to explain why that standard would be required for purported "new information" that arises pre-certification when that same standard already has been rejected in the post-certification context. *E.g., Fund for Envtl. Defense v. County of Orange,* 204 Cal. App. 3d 1538, 1544 (1988). In either case, the "fair argument" standard would place too heavy a hand on the scale. That standard is appropriately applied to review of a decision against preparing an EIR in light of the perceived policy of CEQA in favor of preparation of an EIR; all doubts are resolved against a negative declaration. *See Bowman v. City of Petaluma,* 185 Cal. App. 3d 1065, 1073 (1986). But there is no comparable policy in favor of preparing seriatim supplements to, or recirculations of, an EIR.[10]

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[9](...continued)
courts have reviewed an agency determination not to require a subsequent EIR based on whether the record contains substantial evidence to support [that] determination . . . ." Assoc. Br. at 33. *Mira Monte* does not address, let alone reject, the substantial evidence standard. *Bowman v. City of Petaluma,* 185 Cal. App. 3d 1065, 1075 (1986) (*Mira Monte* was decided "[w]ithout discussing the effects of the substantial evidence standard of review"). Indeed, there was no occasion for the court to do so since it was undisputed that the project would encroach upon wetlands to a degree not previously recognized. Thus the only courts to consider the issue have held that a reviewing court must uphold a decision not to prepare a supplemental or subsequent EIR if that decision is supported by substantial evidence. *See* Regents' Op. Br. at 24.

[10]Under CEQA, the substantial evidence test is expressly incorporated into the statute and Guidelines themselves. *E.g.,* PUB. RES. CODE §§21168, 21168.5; GUIDELINES §15384; *see Laurel Heights I,* 47 Cal. 3d 376, 392-93, 407 (1988). This substantial evidence standard is equivalent to "the standard of review used by courts in reviewing agency decisions"; the fair argument standard, by contrast, applies only when a court is reviewing an agency's decision whether or not to prepare an EIR. Comment foll. GUIDELINES §15384. Accordingly, the substantial evidence standard should apply to an agency's decision not to require recirculation.

The Association's own arguments make the University's point. The Association contends that this Court *cannot* determine whether the new information contained in the Final EIR was significant or not, because that would require it to "pass upon the correctness of the EIR's conclusions" or to "engage in fact-finding in the first instance." Assoc. Br. at 2, 12. Those arguments are silly. Of course, the question whether a given piece of information is "significant" and requires recirculation depends on some initial evaluation of the factual content and importance of the information. Ultimately, however, whether new information is "significant" or not is a legal conclusion for the courts to make, applying the appropriate legal standard and the appropriate standard of review. As explained below (*see* Part III, *infra*), the EIR, the Board of Regents, and both lower courts all found that the new information in the Final EIR was not "significant" in the sense that it did not show that the project would have any new or more adverse impacts not previously discussed in the Draft EIR.[11] As we show in Part III below, there is ample evidence in the record to support those findings; no other conclusion by this Court would be appropriate.

III.

THE SUPERIOR COURT CORRECTLY FOUND THAT THE FINAL EIR DID NOT CONTAIN "SIGNIFICANT NEW INFORMATION" REQUIRING RECIRCULATION.

The Board of Regents approved the Final EIR, and with it that document's conclusion that the Final EIR did "not include significant new information about environmental impacts and [did] not require a fundamental reorganization of the DEIR" and that, accordingly, "there [was] no need to recirculate the Final EIR for an additional public review period." FEIR 75. The University argued below, as

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[11]The Association denies that the Regents found that the additional information in the Final EIR did not require recirculation. Assoc. Br. at 34, 41. It is mistaken. As shown below, the Final EIR expressly found that recirculation was not required because the document did not contain significant new information or represent a fundamental reorganization. *See* p.13, *infra*. The Regents thereupon found that the Final EIR "has been completed in compliance with the California Environmental Quality Act." A.15 at 448-49.

The Association also claims that "the public was prejudiced because it was unable to inform the decisionmaking Regents of errors in the new analyses and to present requests and suggestions for mitigation . . . ." Assoc. Br. at 35. This is also untrue. The public had an opportunity to communicate in writing and in person with the Board of Regents prior to certification of the EIR and approval of the project. Indeed, the Association sent a 13-page letter opposing the project to the Board of Regents (R. 6634-47) *and*, through its representative, personally addressed the Board prior to its approval of the project. R. 6525. The facts of this case vividly demonstrate that recirculation is not required to protect the public's opportunity to communicate with the decisionmaker.

it has here, that this finding should be upheld because the Final EIR revealed no new or more severe adverse environmental impacts. The Superior Court agreed: its denial of the petition for writ of mandate necessarily upheld the Board of Regents' finding. The Court of Appeal majority disagreed as to the applicable legal standard, but it expressly found that the Final EIR "demonstrated no new *adverse* environmental impact" (slip op. at 11 (emphasis added)) regarding air toxics, and impliedly made the same finding as to the other potential impacts.[12]

Thus two reviewing courts, and the Board of Regents in the first instance, have concluded that the Final EIR revealed no new or more severe adverse impacts. In such circumstances, this Court, as a court of discretionary jurisdiction "rather than a court for correction of errors in fact finding, cannot undertake to review concurrent findings of fact by two courts below in the absence of a very obvious and exceptional showing of error." *Graver Tank & Mfg. Co. v. Linde Air Prod. Co.*, 336 U.S. 271, 275 (1949) and cases cited; *accord, Goodman v. Lukens Steel Co.*, 482 U.S. 656, 665 (1987); *Rogers v. Lodge*, 458 U.S. 613, 623 (1982); *Berenyi v. Dist. Director, INS*, 385 U.S. 630, 635 (1967).[13] The "two court-concurrent findings" principle is particularly applicable here, where the Superior Court and the Court of Appeal reviewed the findings of an administrative body:

> "[T]he responsibility of assessing a record to determine whether agency findings are supported by substantial evidence 'is not [the Supreme Court's] but 'primarily' that of the court of appeals. 'This Court will intervene only in what ought to be the rare instance where the standard [of review] appears to have been misapprehended or grossly misapplied.' *Mobil Oil Corp. v. FPC*, 417 U.S. 283, 310 (1974)." (STERN, GRESSMAN & SHAPIRO, SUPREME COURT PRACTICE (6th ed. 1986))

In any event, whatever degree of scrutiny is given, the record will reveal that the Board of Regents correctly found that the Final EIR revealed no new or more

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[12]It was because the Court of Appeal majority agreed that the Final EIR did not disclose new or more significant adverse impacts that it was necessary for it to reach the issue on which review was granted, holding that Section 21092.1 "does *not* trigger recirculation only when the new information shows a new or more severe significant impact." Slip op. at 10 (emphasis deleted). Thus nowhere did the majority reject the conclusion of the dissent that "the new information included in the EIR merely amplifies or confirms the draft EIR's conclusions" and "does not show a significant impact." *Id.* at 3 (dissenting opinion).

[13]The authorities cited above describe the settled practice of the United States Supreme Court. *See* STERN, GRESSMAN & SHAPIRO, SUPREME COURT PRACTICE 218 (6th ed. 1986). In light of the 1984 amendment to Article VI, Section 12 of the California Constitution revising this Court's discretionary jurisdiction in a fashion which closely resembles the United States Supreme Court's discretionary jurisdiction, the principle should be equally applicable to this Court.

significant adverse impacts, and thus that recirculation was not required. This is so whether the Court applies the substantial evidence test urged in Part II, *supra*, or reviews the issue de novo.

A. The Final EIR Did Not Disclose Any New Or More Significant Impacts Relating To Project Noise.

The Association makes a simple issue needlessly complex. In *Laurel Heights I*, this Court held that the 1986 EIR's treatment of noise impacts was sufficient and valid. That EIR, like the current one, adopted as the "daytime performance standard" for the building's mechanical systems "the limits allowable by city ordinance," stated that noise from the fans would be calculated once the systems were designed and the fans selected, and represented that specific noise control treatments would then be evaluated if predicted noise levels exceeded the performance standards. 47 Cal. 3d at 418. This Court held this treatment of the noise impacts valid. *Id.; accord, Sacramento Old City Ass'n v. City Council*, 229 Cal. App. 3d 1011 (1991).

With the current EIR, the University took the same approach to noise impacts this Court upheld in *Laurel Heights I*, committing the University to whatever noise abatement design and equipment modifications are necessary to reduce project noise to below the voluntarily adopted limit prescribed by the San Francisco Noise Ordinance. DEIR 163; FEIR 334. The Board of Regents adopted this mitigation measure (and procedures to implement and monitor it) and found that this would reduce the noise impact to insignificance. A. 15 at 468-469; *id.* at 524-526.[14] Under *Laurel Heights I*, both the Draft and Final EIR, and the Board's ultimate action, fully comply with CEQA.

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[14]In light of this commitment, the Association's claim that recirculation of the Final EIR was required to allow further public comment on certain noise data rings particularly hollow. In *Holy Cross Wilderness Fund v. Madigan*, 960 F.2d 1515 (10th Cir. 1992), for example, the court upheld, under NEPA, a decision by the U.S. Army Corps of Engineers not to supplement a final environmental impact statement after learning that additional data were needed to fully evaluate the impact of a water diversion project on wetlands, since the Corps had issued the permit with the specific condition that there be no wetlands losses, which "essentially guaranteed that the Cities mitigate those impacts." *Id.* at 1526. The court concluded that guarantee made supplementation of the EIS unnecessary:

> "When the Corps determined that there would be no adverse impacts on wetlands, and developed a plan to ensure that result, the need for publication of studies relating to possible effects on wetlands disappeared." (*Id.* at 1527)

Here, the University similarly made it an express condition of the project that any noise impacts be mitigated to insignificance, and developed a mitigation monitoring program to ensure that result. As a result, precisely the same conclusion follows.

The Association argues that because in the Final EIR the University voluntarily provided additional noise data responding to public comments on the Draft EIR, recirculation was required. Assoc. Br. at 42-46. The claim is utterly meritless. In the first place, it ignores the fact that the fundamental basis for the Board of Regents' finding that noise was not a significant adverse impact was the mitigation measure committing the University to incorporating whatever noise abatement design and equipment features are necessary to reduce project noise to below 50 dBA, *not* the informational data provided in the EIR. With or without the additional data provided in the Final EIR, the EIR was sufficient under *Laurel Heights I.*[15]

Moreover, the additional noise data provided in the Final EIR, including certain preliminary noise calculations based on noise generated by typical mechanical equipment of a type likely to be used in the project, merely confirmed the conclusion in the Draft EIR that project noise could be mitigated to an insignificant level. FEIR 335, 343-46 & App. D, pp.3-4; App. E (project noise would be below 50 dBA, and would increase noise levels in neighborhood by no more than 3 dBA, even in nighttime or early morning hours). Nothing in that additional noise data undermines the conclusion of the EIR that project noise would be an insignificant impact.[16]

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[15]The Association asserts that the Draft EIR's discussion of noise impacts was "superficial" and "inadequate." Assoc. Br. at 6, 42. It chastises the University for failing to present measurements of nighttime noise levels (as opposed to 24-hour average noise levels) or information on the amount of noise emitted from "typical laboratory exhaust equipment." *Id.* at 6. But as this Court reminded the Association in *Laurel Heights I,* an EIR need not contain every possible study:

> "A project opponent or reviewing court can always imagine some additional study or analysis that might provide helpful information. It is not for them to design the EIR." (47 Cal. 3d at 415)

[16]The Association says that the EIR's conclusion that project noise would be reduced by no more than 3 dBA is "ambiguous" and that in fact nighttime project noise would increase by more than that amount. Assoc. Br. at 44-45. In fact, the EIR is unambiguous on this point: referring to the very data which the Association purports to cite, it concludes that "overall noise increase in the area as a result of project mechanical equipment operation would be 0 to 3 dBA." FEIR 344; *see also* App. D at p.4.

The Association's erroneous argument to the contrary is discussed in our opening brief at 27 n.20. In addition to demonstrating that its analysis of the noise data is erroneous, we showed that the Association had failed to raise its contention (that recirculation was required because, assertedly, the new data showed that noise would increase by more than 5 dBA) either administratively *or* in the trial court, and could not raise the claim for the first time on appeal. The Association responds that this point was not raised by the University in its Petition For Review. Assoc. Br. at 45 n.10. There was no occasion to do so. The Court of Appeal's opinion did not discuss, let alone reject, the Association's untimely claim that recirculation was required for this reason; *a fortiori,* it did not reject the University's position that the issue could not be raised for

(continued...)

The Association indulges in rhetoric but not analysis when it characterizes the additional noise data in the Final EIR as a "fundamental reorganization" of the EIR. Assoc. Br. at 1, 43. It is no such thing. The Final EIR merely made minor corrections to the text of the Draft EIR, and referenced the additional, confirmatory data. *See* FEIR 343-47.

B. The Final EIR Did Not Disclose Any New Or More Significant Cumulative Impacts Relating To Toxic Air Emissions.

As explained in the opening brief, the Draft EIR found that there were no accepted methodologies for measuring cumulative toxic air emissions from the project and other potential sources; accordingly, it rated the impact as "unknown." The Final EIR did so as well.[17] Regents' Op. Br. at 28-29. By definition, these conclusions did not disclose a new or more significant adverse impact.

In addition, the Final EIR included an experimental study attempting to assess the impacts of cumulative toxic air emissions. *Id.* As our opening brief showed, that experimental study provided comforting news: the maximum estimated cumulative cancer risk increase would be below the standard of significance for the project, and no non-carcinogenic cumulative health effects would be expected. Thus nothing in the additional, albeit experimental, data revealed a new or more significant adverse impact requiring recirculation. *Id.*

The Association makes no argument to the contrary. *See* Assoc. Br. at 10, 47-48.[18]

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[16](...continued)
the first time on appeal. In any event, the Association is just plain wrong on the merits of this tardily raised contention, as the noise data in the Final EIR fully supports the EIR's express finding that noise would increase by no more than 3 dBA as a result of the project.

Finally, the Association repeats the accusation that "the Final EIR revealed that the laboratory exhaust stacks . . . would be up to four feet wide rather than one foot wide" and that this could have unexamined noise impacts requiring recirculation. Assoc. Br. at 45-46. This issue was not raised during the administrative process, and cannot be raised now. In any event, the contention is false: the dimensions of the stacks did *not* change and the Final EIR does not say otherwise. *See* Regents' Op. Br. at 27-28 n.20 and authorities cited.

[17]The Board of Regents conservatively treated this "unknown" impact as if it were an unavoidable significant adverse impact, and found that "if the impacts were significant, specific economic, social or other considerations make infeasible project alternatives in the FEIR." A.15 477-78; *see* Regents' Op. Br. at 29.

[18]Instead, the Association argues that the experimental study could be wrong. Assoc. Br. at 10. But that is precisely why the Final EIR did not claim that the cumulative air toxics impact was insignificant (even though the data from the experimental study supported such a conclusion), and why neither the EIR nor the Board of Regents based any findings on that study. Whether the experimental study is "right" or "wrong" is irrelevant to the issue of recirculation.

C. The Final EIR Did Not Disclose New Or More Significant Impacts Relating To "Night Lighting Glare."

The Final EIR added a new impact for "night lighting glare." However, the Final EIR found that the impact was not significant; in addition, it added a mitigation measure. FEIR 231. The Association's only response is that *its* expert said that the glare "*could potentially* create a significant adverse aesthetic impact . . . ." Assoc. Br. at 9, 47 (emphasis added). But it does not claim–and could not possibly say–that the Final EIR revealed a new or more severe *adverse* impact, and the tentative speculation of its expert is insufficient to overcome the contrary findings of the EIR and the Board of Regents on this issue.

D. The Final EIR Did Not Disclose A New Or More Significant Adverse Impact Relating To Truck Traffic.

As explained in our opening brief, the Final EIR corrected a minor error in the Draft EIR that there would be three on-site truck loading points; in fact, there is to be one. Regents' Op. Br. at 29-30. However, the Final EIR adhered to the conclusion of the Draft EIR that truck trips would not cause a significant environmental impact. *See* DEIR 134; FEIR 228, 256-58. This correction of a minor design detail did not change the project description, and did not identify a new or more severe environmental impact.

E. The Final EIR Did Not Add A New, Environmentally Superior Project Alternative.

The Parnassus alternative was discussed in the Draft EIR. *See* Regents' Op. Br. at 30. It was also discussed in greater detail in the Final EIR. *Id.* Both documents found, as did the Regents, that the Parnassus alternative would be infeasible. DEIR 19-23, 67-70; FEIR 735; Findings, A.15 at 491. If that were not enough, the Final EIR also found that the Parnassus alternative would result in *greater* adverse environmental impacts than the proposed project. FEIR 728-35 (greater adverse impacts relating to University plans and policies, land use and planning, parking, air quality, construction noise); in no respect was the Parnassus alternative superior to the proposed project.[19] Accordingly, the Final EIR's additional discussion of that alternative did not require recirculation.[20]

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[19]The Association's statement that the Final EIR "indicates that [the Parnassus alternative] would cause impacts similar to those at Laurel Heights" (Assoc. Br. at 11) is therefore false. The Association makes no attempt to demonstrate that these findings are erroneous, let alone that they are not supported by substantial evidence.

[20]As explained in the opening brief, recirculation would be required where the Final EIR (continued...)

CONCLUSION

The judgment of the Court of Appeal should be reversed, and the case should be remanded to that court with instructions to place the case back on calendar for argument and disposition of the remaining issues not reached by that court in its prior opinion.

DATED: January 25, 1993.

Respectfully,

JAMES E. HOLST
JOHN F. LUNDBERG
OFFICE OF THE GENERAL COUNSEL
THE REGENTS OF THE UNIVERSITY
OF CALIFORNIA

JEROME B. FALK, JR.
ETHAN P. SCHULMAN
HOWARD, RICE, NEMEROVSKI, CANADY,
ROBERTSON & FALK
A Professional Corporation

By Jerome B. Falk, Jr.
JEROME B. FALK, JR.

Attorneys for Respondent
The Regents of the University of California

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[20](...continued)
disclosed an *environmentally superior* (and feasible) alternative not considered in the Draft EIR. *See* GUIDELINES §15162(a)(3)(B)(4). Since the Final EIR finds that the Parnassus alternative is neither feasible nor environmentally superior, this recirculation "trigger" was not applicable.

PROOF OF SERVICE BY HAND

I am employed by Howard, Rice, Nemerovski, Canady, Robertson & Falk, A Professional Corporation and my business address is 3 Embarcadero Center, San Francisco, CA 94111. I am over the age of eighteen (18) years and not a party to the within action.

On January 25, 1993, I caused to have served by hand a true copy of the foregoing document(s) described as RESPONDENT'S REPLY BRIEF by having said document delivered by hand to the following persons:

Clerk of the Court
California Court of Appeal
First Appellate District, Division 5
Marathon Plaza - South Tower
303 Second Street
San Francisco, CA 94107
(1 copy)

Clerk of the Court
San Francisco Superior Court
City Hall
San Francisco, CA 94102
(1 copy)

I declare under penalty of perjury that the foregoing is true and correct. Executed at San Francisco, California on January 25, 1993.

Bonnie Davis
BONNIE DAVIS

432800/posbh/f-012593:058

PROOF OF SERVICE BY MAIL

I am employed in the County of San Francisco, State of California. I am over the age of eighteen (18) years and not a party to the within action; my business address is Three Embarcadero Center, 7th Floor, San Francisco, California 94111.

I am readily familiar with the practice for collection and processing of documents for mailing with the United States Postal Service of Howard, Rice, Nemerovski, Canady, Robertson & Falk, A Professional Corporation, and that practice is that the documents are deposited with the United States Postal Service the same day as the day of collection in the ordinary course of business.

On January 25, 1993, I served the foregoing document(s) described as RESPONDENT'S REPLY BRIEF on the persons listed below by placing the document(s) for deposit in the United States Postal Service through the regular mail collection process at the law offices of Howard, Rice, Nemerovski, Canady, Robertson & Falk, A Professional Corporation, located at Three Embarcadero Center, 7th Floor, San Francisco, California, to be served by mail addressed as follows:

Kathryn R. Devincenzi, Esq. 3301 Clay Street, No. 202 San Francisco, CA 94118	Attorney for Appellant Laurel Heights Improvement Association of San Francisco
Donald V. Collin California Building Industry Assoc. 1107 9th Street, No. 1060 Sacramento, CA 95814	Attorney for Amicus Curiae California Building Industry Association
Jo Anne M. Bernhard, Esq. 2621 "K" Street Sacramento, CA 95816	Attorney for Amicus Curiae California Building Properties Association
Robin L. Rivett Pacific Legal Foundation 2700 Gateway Oaks Drive, Suite 200 Sacramento, CA 95833	Attorney for Amicus Curiae Pacific Legal Foundation
The Honorable Daniel E. Lungren Attorney General of the State of California Craig C. Thompson Supervising Deputy Attorney General P. O. Box 944255 Sacramento, CA 94244-2550	Attorney for Amicus Curiae Attorney General of the State of California

HOWARD RICE NEMEROVSKI CANADY ROBERTSON & FALK A Professional Corporation

I declare under penalty of perjury that the foregoing is true and correct. Executed at San Francisco, California on January 25, 1993.

Bonnie Davis

BONNIE DAVIS

012593/f-432800:B201/68/50222

EXHIBIT 8

From: Franke, Paul <Paul.Franke@ucsf.edu>
Sent: Thursday, August 20, 2020 5:27:10 PM
To: Goodman, Daniel <DanielM.Goodman@ucsf.edu>
Cc: Whitney, Fred <Fred.Whitney@ucsf.edu>;Wong, Diane C. <Diane.Wong@ucsf.edu>;Beauchamp, Kevin <Kevin.Beauchamp@ucsf.edu>
Subject: RE: 995 GHG requirements

Have we completed a similar analysis for the new hospital?

Yes. It is a chapter in the draft EIR. Specifically the Climate Action Plan Appendix. (Pages 1483 to 1548 https://ucsf.app.box.com/v/CPHP-Draft-EIR)

We analyzed the cost of meeting the greenhouse gas on the entire CPHP project – including NHPH - for both engineering design features into the project and also for buying requisite offsets. The most cost effective path for meeting the requirements of SB 995 will involve some of both some design features and offsets We thoroughly vetted our strategy with the Office of General Counsel at UCOP.

We currently buy offsets. We have a UCSF committee on purchasing future offsets. Purchase of offsets currently comes out of operational funds. The source of future expenditures of funds for project associated offsets not caused by utility usage is still under discussion. We plan to have a recommendation to management in 2021. The soonest that purchase would start is in 2024.

Jackie's figures assume $9/ton. We assume $11 NPV to be conservative. We have actually paid as low as $6. We look at the technology and the cost curves annually.

Paul Franke,
Principal Planner

Campus Planning
UCSF Real Estate
654 Minnesota Street | San Francisco, CA 94143
tel: 415.514.9209
paul.franke@ucsf.edu

UCSF

ucsf.edu | realestate.ucsf.edu

From: Wong, Diane C. <Diane.Wong@ucsf.edu>
Sent: Thursday, August 20, 2020 11:22 AM
To: Franke, Paul <Paul.Franke@ucsf.edu>
Subject: RE: 995 GHG requirements

Do you mean to include this on our CEQA/LRDP meeting today? Sure, though this could be a lengthy discussion. We can start the conversation and maybe key people can stay if we run overtime?

Diane

From: Franke, Paul <Paul.Franke@ucsf.edu>

Sent: Thursday, August 20, 2020 9:05 AM
To: Wong, Diane C. <Diane.Wong@ucsf.edu>
Subject: FW: 995 GHG requirements
Importance: High

Hi Diane,

See below. For discussion later today?

Paul

From: Goodman, Daniel <DanielM.Goodman@ucsf.edu>
Sent: Thursday, August 20, 2020 8:59 AM
To: Franke, Paul <Paul.Franke@ucsf.edu>; Rob Best <Rob.Best@arup.com>
Subject: RE: 995 GHG requirements

Just resending to include Rob in the conversation. Paul and Rob – if it works for you two to have a conversation without me that's OK.

Dan Goodman
Project Manager

Health Major Capital Projects
Integrated Center for Design & Construction (ICDC)
UCSF Real Estate
601 16th Street | San Francisco, CA 94158
tel: 415.290.9935
danielm.goodman@ucsf.edu

UCSF Health

From: Goodman, Daniel
Sent: Thursday, August 20, 2020 8:44 AM
To: Franke, Paul <Paul.Franke@ucsf.edu>
Subject: FW: 995 GHG requirements

Paul,

See below – it's a long email string, but the portion pertaining to you is right on top.

We are going to set up a meeting on Monday from 2-3, but I see that you have a conflict. Is there any way that you could provide some input before Monday? Sorry for the short notice – this came from Brian Newman via our donor, so there is a level of urgency to respond.

Thanks,
Dan

Dan Goodman
Project Manager

Health Major Capital Projects
Integrated Center for Design & Construction (ICDC)

UCSF Real Estate
601 16th Street | San Francisco, CA 94158
tel: 415.290.9935
danielm.goodman@ucsf.edu

UCSF Health

From: Rob Best <Rob.Best@arup.com>
Sent: Thursday, August 20, 2020 8:37 AM
To: Raj Daswani <Raj.Daswani@arup.com>; Goodman, Daniel <DanielM.Goodman@ucsf.edu>; Jon Inman <jinman@mazzetti.com>; James Ramage <jramage@mazzetti.com>; Levitt, Anna <Anna.Levitt@ucsf.edu>
Cc: Whitney, Fred <Fred.Whitney@ucsf.edu>
Subject: RE: 995 GHG requirements

Hi Dan,

Both of the suggested times work for me.

Could I ask as well that we seek any information regarding the current status and scope of the campus EIR process as information for the conversation? That also factors into the SB 995 portion of any conversation. Would be good to know how far along that is and how they are treating NHPH. Paul Franke might be the right person to talk with in advance to understand status.

Thanks,
Rob

Rob Best PhD, CEM
Associate | Energy & Sustainability

Arup
560 Mission Street Suite 700 San Francisco CA 94105 USA
t: +1 415 957 9445
d: +1 415 946 0246
www.arup.com

From: Raj Daswani <Raj.Daswani@arup.com>
Sent: Wednesday, August 19, 2020 7:12 PM
To: Goodman, Daniel <DanielM.Goodman@ucsf.edu>; Rob Best <Rob.Best@arup.com>; Jon Inman <jinman@mazzetti.com>; James Ramage <jramage@mazzetti.com>; Levitt, Anna <Anna.Levitt@ucsf.edu>
Cc: Whitney, Fred <Fred.Whitney@ucsf.edu>
Subject: RE: 995 GHG requirements

Hi Dan –

The Monday timeslot works for me. Let's see what other schedules look like.

Regards,
Raj

From: Goodman, Daniel <DanielM.Goodman@ucsf.edu>
Sent: Wednesday, August 19, 2020 7:05 PM
To: Raj Daswani <Raj.Daswani@arup.com>; Rob Best <Rob.Best@arup.com>; Jon Inman <jinman@mazzetti.com>; James Ramage <jramage@mazzetti.com>; Levitt, Anna <Anna.Levitt@ucsf.edu>
Cc: Whitney, Fred <Fred.Whitney@ucsf.edu>
Subject: [External] RE: 995 GHG requirements

All,

I'm adding Anna into the conversation.

Rob and Raj – Thanks for the thorough explanation – that makes sense. It sounds like there are a lot of variables to consider. I think it makes sense to set up a conversation for next week. Can we do Monday 8/24 from 2-3 or Wednesday 8/26 from 4-5? Let me know if those times work and I'll send out an invite.

I'll see if I can better define the request so we know what level of detail is appropriate for this analysis.

Thanks,
Dan

Dan Goodman
Project Manager

Health Major Capital Projects
Integrated Center for Design & Construction (ICDC)
UCSF Real Estate
601 16th Street | San Francisco, CA 94158
tel: 415.290.9935
danielm.goodman@ucsf.edu

UCSF Health

From: Raj Daswani <Raj.Daswani@arup.com>
Sent: Wednesday, August 19, 2020 6:25 PM
To: Rob Best <Rob.Best@arup.com>; Goodman, Daniel <DanielM.Goodman@ucsf.edu>; Jon Inman <jinman@mazzetti.com>; James Ramage <jramage@mazzetti.com>
Cc: Whitney, Fred <Fred.Whitney@ucsf.edu>
Subject: RE: 995 GHG requirements

Thanks Rob, great summary.

We did not get into a detailed GHG analysis during masterplanning as Rob mentioned below. However, if we wanted to take a step towards this direction and/or discuss Rob's points in more detail – can I suggest setting up a conversation with Anna Levitt. We can then take the next step based on the outcome of that conversation.

We have had similar conversations with Anna on carbon accounting and calculations on other ongoing Parnassus projects (unrelated to SB995) and that would be the best first step. Arup/Mazzetti can follow through based on our agreed next steps. Let me know if you have additional thoughts.

Regards,
Raj

Raj Daswani, PE
Principal

Arup
560 Mission Street, 7th Floor, San Francisco, CA 94105
t +1 415 957 9445 **d** +1 415 946 0609
f +1 415 957 9096 **c** +1 415 595 6151
www.arup.com

From: Rob Best <Rob.Best@arup.com>
Sent: Wednesday, August 19, 2020 4:28 PM
To: Goodman, Daniel <DanielM.Goodman@ucsf.edu>; Raj Daswani <Raj.Daswani@arup.com>; Jon Inman <jinman@mazzetti.com>; James Ramage <jramage@mazzetti.com>
Cc: Whitney, Fred <Fred.Whitney@ucsf.edu>
Subject: RE: 995 GHG requirements

Dan,

My understanding of SB 995 is that it is an extension of AB 900, which allows projects that so choose to be streamlined under CEQA if they commit to offsetting any additional greenhouse gas emissions the project would incur compared to the existing use (I'll caveat that I'm getting up to speed a bit on it—this is the first project of mine where SB 995 has come up, and SB 995 is not yet passed into law, I don't believe). If my read is correct that it is functionally an extension of AB 900 for non-housing projects, then we are currently pursuing two projects with this pathway as well (under AB 900). In both of those cases, offsets were the way to go because the site prevented us from achieving the requirement of no net new GHGs any other way.

For NHPH, to answer your question, we have not done any cost analysis. However, we have reasonably observed that the project cannot get offset a significant portion of its emissions on-site with PV or other means due to the use, height, and the general lack of sun at Parnassus. So as an early assumption, we would assume that offsets would be required to meet an SB 995 target for NHPH.

In our experience working through projects with AB 900, it is comprehensive in the offsets required. While UCSF will be purchasing green power that would take care of the electrical and gas use at limited additional cost (and as part of the UC purchasing pool hopefully would meet the requirements CARB sets for emissions offsets or green power under AB 900), the transportation emissions offset might be harder. AB 900 (and I believe SB 995 as well) requires that VMT be reduced 15% as part of the project from a baseline condition, and that traffic generated by the project be offset. This has been the largest category on projects we've worked on, including a different hospital project (though there it was closer to energy than on mixed use projects that applied). Currently, some of the transportation emissions are outside the UC goals (Scope 3 are not required to be carbon neutral until 2050). So the offset cost would be higher than what the project might incur without pursuing SB 995.

One other wrinkle—since the NHPH project will be under a master EIR for the campus, for the streamlining benefit to kick in, the entire campus EIR might have to pursue SB 995, which would further increase the analysis and cost to purchase offsets. I'm less sure about that portion, and a CEQA consultant may need to weigh in on the pathways allowable, but wanted to flag that may be one issue to consider.

I hope this is helpful, and let me know if there are points that we want to discuss further or seek to understand a bit more to determine relevance to NHPH.

-Rob

Rob Best PhD, CEM
Associate | Energy & Sustainability

Arup
560 Mission Street Suite 700 San Francisco CA 94105 USA
t: +1 415 957 9445
d: +1 415 946 0246
www.arup.com

From: Goodman, Daniel <DanielM.Goodman@ucsf.edu>
Sent: Wednesday, August 19, 2020 2:56 PM
To: Raj Daswani <Raj.Daswani@arup.com>; Jon Inman <jinman@mazzetti.com>; Rob Best <Rob.Best@arup.com>; James Ramage <jramage@mazzetti.com>
Cc: Whitney, Fred <Fred.Whitney@ucsf.edu>
Subject: [External] FW: 995 GHG requirements

All,

See the below email. Can you let me know if we have analyzed this at all? I'm not aware of any existing analysis.

Given that the request is coming from our donor, and Brian Newman, I'm hoping that we can provide something quickly. Let me know your thoughts.

Thanks,
Dan

Dan Goodman
Project Manager

Health Major Capital Projects
Integrated Center for Design & Construction (ICDC)
UCSF Real Estate
601 16th Street | San Francisco, CA 94158
tel: 415.290.9935
danielm.goodman@ucsf.edu

UCSF Health

From: Eckblad, Stuart <Stuart.Eckblad@ucsf.edu>
Sent: Wednesday, August 19, 2020 2:51 PM
To: Whitney, Fred <Fred.Whitney@ucsf.edu>; Goodman, Daniel <DanielM.Goodman@ucsf.edu>
Subject: FW: 995 GHG requirements

Can you let me know re have we looked into-analyzed this?

From: Newman, Brian <Brian.Newman@ucsf.edu>
Sent: Wednesday, August 19, 2020 1:09 PM
To: Eckblad, Stuart <Stuart.Eckblad@ucsf.edu>
Cc: Polek, Elizabeth <Elizabeth.Polek@ucsf.edu>; Beauchamp, Kevin <Kevin.Beauchamp@ucsf.edu>

Subject: FW: 995 GHG requirements

Stuart – see the email below from Jackie. The GHA reduction requirements in the streamlining legislation has a material impact on the cost of the Berkeley housing project. Have we completed a similar analysis for the new hospital?

Brian Newman
Senior Associate Vice Chancellor, UCSF Real Estate
Vice President, UCSF Health

From: "Safier, Jackie" <JSafier@prometheusreg.com>
Date: Wednesday, August 19, 2020 at 1:03 PM
To: Brian Newman <Brian.Newman@ucsf.edu>
Subject: RE: 995 GHG requirements

Brian: We did analyze the cost of meeting the greenhouse gas requirements of SB 995 on our Berkeley project with Ramboll. Sharing this as it applies to UCSF if going this route. Here is what we found preliminarily as it applies to our project in Berkeley.

- Basically our 300 million project, we need 32,000 tons – to buy carbon credits it would cost about $300K. To engineer it into the project would be $20 million (so buying the offsets is the route to go)
- Issue is the A's need 531K tons (so 15 times more than us) so about $4.8 million in carbon offset credits to purchase.
- If in Berkeley we decide to apply come January or February 20202 , we would need to buy the credits then. Issue with there being a supply available given the A's purchases and pricing.

Jackie

Jackie Safier | **PROMETHEUS REAL ESTATE GROUP, INC.** | c: 650.245.1404

EXHIBIT 9

From: Beauchamp, Kevin </O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=E63EBBFC690D4790851DEF00ACD09900-BEAUCHAMP,>
Sent: Saturday, March 23, 2019 11:28:23 AM
To: Priest, Sharon <Sharon.Priest@ucsf.edu>
Cc: Yamauchi, Lori <Lori.Yamauchi@ucsf.edu>
Subject: RE: CPHP next steps

Sharon—let's discuss on Monday.

Along these lines I spoke with Brian yesterday afternoon and he suggested combining the two building sites to the west of UCH (sites D and E1) to create one larger research/institutional footprint, and considering site G for housing instead of research.

Kevin

From: Newman, Brian
Sent: Saturday, March 23, 2019 8:52 AM
To: Beauchamp, Kevin <Kevin.Beauchamp@ucsf.edu>; Priest, Sharon <Sharon.Priest@ucsf.edu>
Cc: Yamauchi, Lori <Lori.Yamauchi@ucsf.edu>
Subject: CPHP next steps

Kevin and Sharon - In response to the committee feedback, please work with the PE team to determine how we can accommodate more housing on the west end and Aldea with larger massing and potentially taller buildings. This would be just a scenario that we can evaluate internally with Paul and Sam. With the UC Hall demo scenario and a larger replacement building, maybe some of those opportunity sites in the west end can become housing rather additional than program space.

I am hopeful that the next phase of renderings will address some of Jackie's concerns about the quality of the architecture. From my conversations with her after the meeting she was reacting to the incomplete state of the images we showed yesterday and specific elements like how the garages were skinned.

As far as Alex's comment, I don't think he truly grasped how many buildings we propose to demo. We can produce a graphic that illustrates all of the buildings proposed for demo and the total square footage: LPPI, UHC, SON, SOD, MUE, Koret, Kirkham. I realize these demos were outlined on one of the slides but I think we need a specific graphic that shows demos and nothing else.

Thanks.
Brian

Brian Newman
Senior Associate Vice Chancellor, UCSF Real Estate
Vice President, UCSF Health

University of California San Francisco
654 Minnesota Street, SF, CA 94143

Office: 415.476.8889
Mobile: 503.453.4269
brian.newman@ucsf.edu

UCSF.edu | FAS.ucsf.edu | Facebook.com/ucsf | Twitter.com/ucsf

EXHIBIT 10

LOZEAU DRURY LLP

T 510.836.4200
F 510.836.4205

1939 Harrison Street, Ste. 150
Oakland, CA 94612

www.lozeaudrury.com
richard@lozeaudrury.com

Via Email

September 11, 2020

John A. Pérez, Chair
Cecilia Estolano, Vice Chair
Regents of the University of California
c/o Ms. Diane Wong
UCSF Campus Planning, Box 0286
San Francisco, CA 94143
EIR@UCSF.edu

Re: Comment on Draft Environmental Impact Report, UCSF Comprehensive Parnassus Heights Plan (SCH 2020010175)

"The total structures within the campus boundaries shall not exceed 3.55 million gross square feet (not including space committed to residential use on Third, Fourth, Fifth and Parnassus Avenues and Kirkham and Irving Streets) and this limit shall be permanent."

-Resolution of the Board of Regents of the University of California, May 21, 1976 (Exhibit A)

Dear Chair Pérez, Vice Chair Estolano, and Honorable Regents:

This letter is submitted on behalf of the Parnassus Neighborhood Coalition ("PNC"), a group of residents living near the University of California, San Francisco ("UCSF") Parnassus Heights campus, regarding the Draft Environmental Impact Report ("DEIR") prepared for the Comprehensive Parnassus Heights Plan ("CPHP") (SCH 2020010175) (the "Project"). After reviewing the DEIR, we conclude that the EIR fails as an informational document and fails to impose all feasible mitigation measures to reduce the Project's impacts. PNC requests that the University address these shortcomings in a revised draft environmental impact report ("RDEIR") and recirculate the RDEIR prior to considering approvals for the Project. We reserve the right to supplement these comments during review of the Final EIR for the Project and at public hearings concerning the Project. *Galante Vineyards v. Monterey Peninsula Water Management Dist*. (2007) 60 Cal.App.4th 1109, 1121.

I. PROJECT DESCRIPTION

In 2014, the University of California prepared a Long Range Development Plan ("2014 LRDP") setting forth concepts, principles, and plans to guide future growth for the UCSF campus, outlining projected development levels and patterns for UCSF at all of its main campus sites through 2035. Available at https://ucsf.app.box.com/s/h6f3cfzsznl1bl3kk0am5k9gtc5lila8/file/701727549327. The Regents certified the FEIR for the LRDP in November 2014, which included an analysis of the potential environmental impacts from then-envisioned development at the Parnassus Heights campus site. However, at some point after this, UCSF undertook a planning process to re-envision and revitalize the Parnassus Heights campus as a whole, resulting in the development of the CPHP, which provides a long-term development framework for the "revitalization" of the Parnassus Heights campus.

This Project proposes to develop approximately 2.9 million gross square feet ("gsf") of new building space at Parnassus Heights. The CPHP includes an "Initial Phase" that comprises of: 1) Irving Street Arrival improvements, 2) Research and Academic Building ("RAB"), 3) initial Aldea Housing Densification, and 4) New Hospital. This Initial Phase is anticipated to be completed by approximately 2030. Beyond the Initial Phase, the "Future Phase" encompasses the remaining development described in the CPHP envisioned for completion by the horizon year of 2050. However, when accounting for existing campus site development, demolition that was approved under the UCSF 2014 LRDP but not yet implemented, and potential additional building demolition that would occur under the CPHP, the total amount of campus space upon full implementation of the CPHP would be 6.0 million gsf. The Project will add over 2 million square feet of additional space. To put this in perspective, this is equivalent to placing both the Salesforce Tower and the Transamerica Pyramid on this highly congested site in a residential neighborhood.

The CPHP for the first time reneges on the promise made by the UC Regents in 1976 to the City of San Francisco and the community of Parnassus Heights to resolve a CEQA lawsuit that the Parnassus campus would never exceed 3.55 million square feet. The CPHP would exceed this Space Ceiling by over 2 million square feet, making a mockery of this false promise.

II. LEGAL BACKGROUND

CEQA requires that an agency analyze the potential environmental impacts of its proposed actions in an environmental impact report ("EIR") (except in certain limited circumstances). *See, e.g.*, Pub. Res. Code § 21100. The EIR is the very heart of CEQA. *Dunn-Edwards v. BAAQMD* (1992) 9 Cal.App.4th 644, 652. "The 'foremost principle' in interpreting CEQA is that the Legislature intended the act to be read so as to afford the fullest possible protection to the environment within the reasonable scope of the

statutory language." *Communities for a Better Environment v. Calif. Resources Agency* (2002) 103 Cal. App. 4th 98, 109.

CEQA has two primary purposes. First, CEQA is designed to inform decision makers and the public about the potential, significant environmental effects of a project. 14 Cal. Code Regs. ("CEQA Guidelines") § 15002(a)(1). "Its purpose is to inform the public and its responsible officials of the environmental consequences of their decisions before they are made. Thus, the EIR 'protects not only the environment but also informed self-government.'" *Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal. 3d 553, 564. The EIR has been described as "an environmental 'alarm bell' whose purpose it is to alert the public and its responsible officials to environmental changes before they have reached ecological points of no return." *Berkeley Keep Jets Over the Bay v. Bd. of Port Comm'rs*. (2001) 91 Cal. App. 4th 1344, 1354 ("Berkeley Jets"); *County of Inyo v. Yorty* (1973) 32 Cal.App.3d 795, 810.

Second, CEQA requires public agencies to avoid or reduce environmental damage when "feasible" by requiring "environmentally superior" alternatives and all feasible mitigation measures. CEQA Guidelines § 15002(a)(2) and (3); see also, *Berkeley Jets*, 91 Cal. App. 4th 1344, 1354; *Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal.3d 553, 564. The EIR serves to provide agencies and the public with information about the environmental impacts of a proposed project and to "identify ways that environmental damage can be avoided or significantly reduced." CEQA Guidelines §15002(a)(2). If the project will have a significant effect on the environment, the agency may approve the project only if it finds that it has "eliminated or substantially lessened all significant effects on the environment where feasible" and that any unavoidable significant effects on the environment are "acceptable due to overriding concerns." Pub. Res. Code § 21081; CEQA Guidelines § 15092(b)(2)(A) & (B). The lead agency may deem a particular impact to be insignificant only if it produces rigorous analysis and concrete substantial evidence justifying the finding. *Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692, 732 (Cal. App. 5th Dist. 1990).

The EIR is the very heart of CEQA "and the integrity of the process is dependent on the adequacy of the EIR." *Berkeley Jets*, 91 Cal. App. 4th 1109, 1355. CEQA requires that a lead agency analyze all potentially significant environmental impacts of its proposed actions in an EIR. Pub. Res. Code § 21100(b)(1); Guidelines § 15126(a); *Berkeley Jets*, 91 Cal.App.4th 1344, 1354. The EIR must not only identify the impacts, but must also provide "information about how adverse the impacts will be." *Santiago County Water Dist. v. County of Orange* (1981) 118 Cal.App.3d 818, 831. The lead agency may deem a particular impact to be insignificant only if it produces rigorous analysis and concrete substantial evidence justifying the finding. *Kings County Farm Bureau*, 221 Cal.App.3d 692, 732. "The 'foremost principle' in interpreting CEQA is that the Legislature intended the act to be read so as to afford the fullest possible protection to the environment within the reasonable scope of the statutory language." *Communities for a Better Env't*, 103 Cal.App.4th 98, 109.

The California Supreme Court has noted that "the adequacy of an EIR's discussion of environmental impacts is an issue distinct from the extent to which an agency is correct in its determination whether the impacts are significant" and, as such, "adequacy of discussion claims are not typically amenable to substantial evidence review." *Sierra Club v. Co. of Fresno* (2018) 6 Cal. 5th 502, at 514-15. Rather, such claims are reviewed de novo to determine "whether the discussion sufficiently performs the function of facilitating 'informed agency decisionmaking and informed public participation.'" *Id*. at 513 [quoting *California Native Plant Soc'y v. City of Santa Cruz* (2009) 177 Cal.App.4th 957, 988].

"[T]he reviewing court is not to 'uncritically rely on every study or analysis presented by a project proponent in support of its position. A 'clearly inadequate or unsupported study is entitled to no judicial deference.'" *Berkeley Jets*, 91 Cal. App. 4th 1344, 1355 (emphasis added), quoting, *Laurel Heights Improvement Assn. v. Regents of University of California*, 47 Cal. 3d 376, 391 409, fn. 12 (1988). A prejudicial abuse of discretion occurs "if the failure to include relevant information precludes informed decisionmaking and informed public participation, thereby thwarting the statutory goals of the EIR process." *San Joaquin Raptor/Wildlife Rescue Center v. County of Stanislaus* (1994) 27 Cal. App. 4th 713, 722; *Galante Vineyards v. Monterey Peninsula Water Management Dist*. (1997) 60 Cal. App. 4th 1109, 1117; *County of Amador v. El Dorado County Water Agency* (1999) 76 Cal. App. 4th 931, 946. As discussed below, and in the attached expert comment letters of expert Dr. Smallwood, expert consulting firm SWAPE, Mr. Ikeda, and Ms. Watt, the EIR for this Project fails to adequately analyze and mitigate the Project's impacts.

In general, mitigation measures must be designed to minimize, reduce or avoid an identified environmental impact or to rectify or compensate for that impact. CEQA Guidelines § 15370. Where several mitigation measures are available to mitigate an impact, each should be discussed and the basis for selecting a particular measure should be identified. *Id.* at § 15126.4(a)(1)(B). A lead agency may not make the required CEQA findings unless the administrative record clearly shows that all uncertainties regarding the mitigation of significant environmental impacts have been resolved.

III. DISCUSSION

A. Space Ceiling.

The most glaring shortcoming of the CPHP is that it reneges on the Regents' promise to the City of San Francisco and the community of Parnassus Heights never to exceed 3.55 million square feet of development at the Parnassus Heights campus. This promise was made by the Regents themselves to resolve a lawsuit in 1976, and has been reaffirmed countless times thereafter, most recently in the 2014 LRDP. In May 21, 1976, the Regents adopted a resolution stating the following:

> The total structures within the campus boundaries shall not exceed 3.55 million gross square feet (not including space committed to residential use on Third, Fourth, Fifth and Parnassus Avenues and Kirkham and Irving Streets) and ***this limit shall be permanent.*** These restrictions prohibit expansion by UCSF by purchase or condemnation or gift of any property or lease of private residential property not only contiguous with the new campus boundaries, but anywhere within the surrounding area bounded by Golden Gate Park, Oak Street, Ninth Avenue, Clayton and Clarendon. This does not prohibit the use of commercial properties or the affiliation with other public agencies within the area described.

1976 Resolution, ¶ 2 (emphasis added) (Exhibit A). The Regents directed that these commitments be amended into the 1975 Long Range Development Plan. Id., ¶ 6 ("That the Long Range Development Plan for the San Francisco campus, as approved by The Regents in October, 1975, be amended to reflect the described changes in designation of open space, boundaries, and use of housing").

The Space Ceiling was reaffirmed by the Regents in the Long Range Development Plans (LRDPs) of 1982 and 1994. It was reaffirmed in 2014, though amended to exclude certain residential properties from the calculation of the Campus' gross square feet. UC has relied on the Space Ceiling as a justification to develop other sites throughout the City. In *Laurel Heights II*, the Regents represented to the Supreme Court that the expansion to Laurel Heights was necessary since the Space Ceiling prohibited any further development at the Parnassus Campus. *Laurel Heights Impr. Assoc. v. Regents of Univ. of Calif.* (1993) 6 Cal.4th at 1120 (*Laurel Heights II*). The Supreme Court noted in the *Laurel Heights I and II* cases that development of the new Laurel Heights campus was necessary due to the Regents' representation of "serious space constraints at the Parnassus campus and concluded there was a need to develop off-campus locations." *Laurel Heights II,* 6 Cal.4th at 1120; *Laurel Heights Impr. Assoc. v. Regents of Univ. of Calif*. (1988) 47 Cal.3d at 388 (*Laurel Heights I*). Having benefitted by relying on the Space Ceiling to develop other locations, the Regents now want to disregard the Space Ceiling and its prior declaration to the Court, notwithstanding the reliance of the community on the commitment. The Space Ceiling was negotiated because the campus was too small to accommodate future growth, and that remains even more pressing today.

In 2014, the Regents adopted a Long Range Development Plan ("LRDP") that recognized the need to comply with the Space Ceiling, and to "decompress" the Parnassus Campus by moving certain functions to other locations. However, in order to more readily comply with the Space Ceiling, the Regents amended the 1976 Resolution's development ceiling to exclude specific residential development at Aldea Housing and University House from the ceiling calculation. The 1976 Resolution had not excluded these specific residential buildings from the development ceiling calculation, although other residential areas were excluded. See 2014 LRDP, p. 51 ("The total

amount of structured space within the campus boundaries is not to exceed 3.55 million gsf, excluding space committed to residential use on Third, Fourth, Fifth, and Parnassus avenues and Kirkham and Irving streets.") The 2014 LRDP "identifies strategies to reduce the space ceiling overage over the life of the LRDP by: 1) converting some existing office space (UC Hall and Millberry Union towers) to residential use; 2) demolishing a number of buildings and either moving occupants and programs to other campus sites or absorbing them into other buildings at Parnassus Heights; and 3) excluding all residential space from the space ceiling calculation." 2014 LRDP, p. 57 (emphasis added). The 2014 LRDP included an amendment to the 1976 Resolution which stated, "3. The space ceiling for the Parnassus Heights campus site is 3.55 million gross square feet. The space ceiling includes space in non-residential buildings within the boundary of the Parnassus Heights campus site." 2014 LRDP, p. 64. Although the 2014 LRDP was intended to guide the University's growth through 2035, the University is now proposing to abandon the 2014 LDRP at the Parnassus Campus to allow dramatic expansion of development approved in 2014 and proposed as the UCSF Comprehensive Parnassus Heights Plan. The Plan proposes to further amend the 1976 Resolution to "Increase the space ceiling limit from the current 3.55 million gsf to a proposed 5.05 million gsf, excluding housing (an increase of approximately 1.5 million gsf above the current space ceiling limit) in recognition of the tremendous need for program space at the campus site in order for UCSF to retain its leadership position in patient care, research, and education." Plan DEIR, p. 3-44.

As discussed below, under the doctrine of promissory estoppel, the Regents cannot abandon their solemn promise to the community to adopt a "permanent" Space Ceiling of 3.55 million square feet.

1. The Space Ceiling is Enforceable Under the Doctrine of Promissory Estoppel

a. Elements of Promissory Estoppel

Promissory estoppel involves "'[a] promise which the promisor should reasonably expect to induce action or forbearance of a definite and substantial character on the part of the promisee and which does induce such action or forbearance is binding if injustice can be avoided only by enforcement of the promise.' This rule is applicable in California." *Hilltop Properties, Inc. v. State* (1965) 233 Cal.App.2d 349, 362. "The elements of promissory estoppel are (1) a promise, (2) the promisor should reasonably expect the promise to induce action or forbearance on the part of the promisee or a third person, (3) the promise induces action or forbearance by the promisee or a third person, and (4) injustice can be avoided only by enforcement of the promise." *Kajima/Ray Wilson v. Los Angeles County Metropolitan Transportation Authority* (2000) 23 Cal.4th 305, 310.

The purpose of promissory estoppel is “to make a promise binding even though there was no consideration in the sense of something that is bargained for and given in exchange. Reasonable reliance serves to hold the offeror in lieu of the consideration ordinarily required to make the offer binding." *Id*. “Promissory estoppel is a theory of recovery which is allowed where injustice can be avoided only by enforcement of the promise, this usually occurring where the plaintiff has made a complete and substantial change of position in reliance upon the promise.” *Id*. The doctrine only applies where there was no bargained for reliance by the promissee. *Id*. at 363.

“[E]stoppel has been applied with some reluctance insofar as its application against a governmental body is concerned, since it is the general rule that a governmental agency may not be estopped by the conduct of its officers and employees.” *Id*. at 364. Here, however, the Regents adopted the resolution at issue, so there would not be a problem regarding a promise of an employee or officer. The promise at issue was made by the University’s ultimate decision-making body, not by a subordinate employee. There was a written promise, especially given the emphatic statement that the development ceiling of 1976 was “permanent.”

The Space Ceiling Resolution meets all of the elements of promissory estoppel:

(1) There is no dispute that the Space Ceiling Resolution was a promise never to build more than 3.55 million square feet at the campus;
(2) The Regents reasonably expected the promise to induce action or forbearance on the part of the promisee or a third person -- namely the dismissal of the 1976 CEQA lawsuit;
(3) The promise induced action or forbearance by the promisee or a third person -- namely the Petitioners did in fact dismiss their lawsuit; and
(4) Injustice can be avoided only by enforcement of the promise. There is no way for the Petitioners or anyone else to revive the 1976 lawsuit at this point since the limitations period is long expired. The only way avoid injustice is to enforce the promise.

The adoption of the Space Ceiling induced a forbearance “of a definite and substantial character” by any neighbors or organizations. In particular, the neighbors forbore from prosecuting their CEQA lawsuit challenging the 1975 LRDP.

First, there can be no question that the Space Ceiling Resolution was a “promise.” Second, the Regents clearly reasonably expected the petitioners in the 1975 LRDP case to drop their lawsuit in exchange for the promise of a “permanent” Space Ceiling. There is no way to avoid the injustice other than to enforce the Regents’ solemn promise, since the 1976 CEQA petitioners cannot now reinstitute their action. All of the elements of promissory estoppel are satisfied. The Regents therefore cannot simply disregard the promise made to the City and the neighborhood in 1976 simply because they find it no longer convenient to keep their promise.

b. The 1976 Space Ceiling Does Not Impair the Police Power.

The Regents may contend that the 1976 Resolution improperly surrenders or impairs the Regents' delegated governmental power sitting as a legislative body. As a general rule, "a local government may not contract away its right to exercise its police power in the future, and land use regulations involve the exercise of police power." See *Alameda Cty. Land Use Assn. v. City of Hayward* (1995) 38 Cal.App.4th 1716, 1724. Courts '"will not read into the contract[ ] an abrogation of the potential future exercise of the sovereign police power." *Richeson v. Helal* (2007) 158 Cal.App.4th 268, 280 (involving effort to enforce covenants to remove nonconforming use despite issuance of use permit), and will construe a contract, if possible, in a manner that preserves the police power. *Id*. at p. 281, citing *Delucchi v. County of Santa Cruz* (1986) 179 Cal.App.3d 814, 823-824 (rejecting interpretation of Williamson Act contract which sought "wholesale freeze of zoning" changes). "A contract that purports to do so is invalid as contrary to public policy if the contract amounts to a municipality's 'surrender' or 'abnegation' of its control of a municipal function." *108 Holdings, Ltd. v. City of Rohnert Park* (2006) 136 Cal.App.4th 186, 195.

First, it is unclear whether the Regents even possess police powers. There is no case law discussing whether the University wields any police powers. "The definition of 'police power' is broad and rather nebulous." *Goldbaum v. Regents of Univ. of California* (2011) 191 Cal.App.4th 703, 712. "The police power is the authority to enact laws to promote the public health, safety, morals and general welfare. [Citation.] Legislation is within the police power if it is reasonably related to a proper legislative goal." *Id*., quoting C*ommunity Memorial Hospital v. County of Ventura* (1996) 50 Cal.App.4th 199, 206, 56 Cal.Rptr.2d 732. "As noted in Witkin's Summary of California Law, 'It has been said that the police power is simply the power of sovereignty or power to govern—the inherent reserved power of the state to subject individual rights to reasonable regulation for the general welfare.'" *Churchill v. Parnell* (1985) 170 Cal.App.3d 1094, 1098 (quoting 5 Witkin, Summary of Cal. Law (8th ed. 1974) Constitutional Law, § 435, p. 3734). Most of the cases touching on police power and the Regents involves whether statutes enacted by the Legislature pursuant to its police powers are applicable to the Regents.

Second, even if the Regents possess police powers, they were not exercising police powers in adopting the Space Ceiling, but merely limiting their own use of their own property as a market participant. The Space Ceiling is an act of the Regents placing limitations on themselves. It limits the Regents use of their own property. It does not restrict the general public or anyone else in any manner, as would a general plan or zoning ordinance. A governmental entity's role in regulating the use of its own property is not an exercise of its police power or its power as a government per se, but as a market participant engaged in what were historically called proprietary activities. *City of Oakland v Burns* (1956) 46 C2d 401, 407 ("When a governmental entity is authorized to exercise a power purely proprietary, the law leans to the theory that it has

full power to perform it in the same efficient manner as a private person would"). Governmental entities have broad discretion over the use of their own property. *Laura Vincent Co. v City of Selma* (1941) 43 CA2d 473. 43 CA2d at 476; see also *Irwin v City of Manhattan Beach* (1966) 65 C2d 13.

The courts have recognized the validity of permanent deed restrictions on public property donated to the public by private entities. Thus, when land is donated to the city with a restriction on its use, the city usually cannot divert the use of the property to purposes inconsistent with the terms of the grant, including transferring an interest in the donated land to private parties for nonpublic uses. *Big Sur Props. v Mott* (1976) 62 CA3d 99. Thus, a public entity should be equally in its right to impose permanent restrictions on its own property.

The Space Ceiling was not an attempt to "subject individual rights to reasonable regulation for the general welfare." Instead, it was simply the Regents' decision regarding how to use its own property. Instead of exercising any non-delegable police powers, the Regents used their "virtual plenary power" to manage and dispose of their property by entering into a "permanent" commitment to maintain a Space Ceiling of 3.55 million square feet. There is no reason that this promise should not be enforceable.

2. The Space Ceiling is Enforceable Under the Doctrine of Equitable Estoppel.

The California Supreme Court has articulated the doctrine of equitable estoppel as follows: "[o]ne cannot justly or equitably lull his adversary into a false sense of security, and thereby cause his adversary to subject his claim to the bar of the statute of limitations, and then be permitted to plead the very delay caused by his course of conduct as a defense to the action when brought. [Citations]" *Lantzy v. Centrex Homes* (2003) 31 Cal.4th 363, 383. The Court further noted: "[a]n estoppel may arise although there was no designed fraud on the part of the person sought to be estopped. [Citation.] To create an equitable estoppel, 'it is enough if the party has been induced to refrain from using such means or taking such action as lay in his power, by which he might have retrieved his position and saved himself from loss.' ... Where the delay in commencing action is induced by the conduct of the defendant it cannot be availed of by him as a defense. [Citations]" *Id*. at 384.

In this case, the elements of equitable estoppel are present. To establish equitable estoppel, a Plaintiff must show: 1) the Defendant knew the relevant facts; 2) the Defendant made a misrepresentation bearing on the necessity of bringing a timely suit; 3) the Defendant intended its words or conduct would be acted upon or led Plaintiff to believe it was so intended; 4) Plaintiff was ignorant of the true state of facts; and 5) Plaintiff reasonably relied thereon in delaying commencement of the action. *Doheny Park Terrace Homeowners Ass'n, Inc. v. Truck Ins. Exch.* (2005) 132 Cal.App.4th 1076,

1099. Finally, 6) the exception applies here to the rule that estoppel is not ordinarily applied against a city for the conduct of its officials.

a. The Regents knew the relevant facts.

The Regents were aware that they had been sued under CEQA over the 1975 LRDP. To settle that case, the Regents adopted a resolution imposing a permanent space ceiling on the Parnassus Campus. The Regents knew that this would induce the petitioners to drop their lawsuit, which they did. As the court held in *Lantzy v. Centrex Homes* (2003) 31 Cal.4th 363, 383, "[a]n estoppel may arise although there was no designed fraud on the part of the person sought to be estopped. [Citation.] To create an equitable estoppel, 'it is enough if the party has been induced to refrain from using such means or taking such action as lay in his power, by which he might have retrieved his position and saved himself from loss.' ... Where the delay in commencing action is induced by the conduct of the defendant it cannot be availed of by him as a defense. [Citations]" *Id*. at 384.

b. Regents made a misrepresentation bearing on the necessity of bringing a timely suit

The Regents made their promise to settle a lawsuit, but reneged on the promise long after the time had passed to refile or revive the lawsuit. The Petitioners are not able to bring a timely suit at this point since the statute of limitation has expired.

c. Regents intended their words or conduct would be acted upon or led Petitioners to believe it was so intended.

The Regents obviously intended the adoption of the Space Ceiling Resolution to induce the petitioners to dismiss their CEQA lawsuit challenging the 1975 LRDP.

d. Petitioners were ignorant of the true state of facts.

The petitioners in the 1975 lawsuit were ignorant of the fact that the Regents would renege upon their commitment to a "permanent" space ceiling of 3.55 million square feet.

e. Petitioners reasonably relied upon the commitment.

The petitioners in the 1975 lawsuit reasonably believed that when the Regents adopted a Resolution stating that development would never exceed 3.55 million square feet, and that this commitment would be "permanent," that the Resolution meant what it said.

f. The Regents may not rely on the rule relating to the conduct of government officials because its application would work a grave injustice in this case.

As the California Supreme Court has stated, there is a general rule that a "government agency may not be estopped by the conduct of its officers or employees." *Farrell v. Co. of Placer* (1944) 23 Cal.2d 624, 627 ("*Farrell*"). However, the Court held in that same case that "there are many instances in which an equitable estoppel in fact will run against the government where justice and right require it. [Citations]" Id. at 627-628; see also *California Cigarette Concessions, Inc. v. City of Los Angeles* (1960) 53 Cal.2d 865, 869 ("estoppel against a city is appropriate "when the facts clearly establish that a grave injustice would be done if an equitable estoppel were not applied. [Citation]"). The court noted that the government should be held to a similar standard as ordinary citizens in the conduct of its business, quoting Justice Holmes thus: "…[i]t has been aptly said: 'If we say with Mr. Justice Holmes, 'Men must turn square corners when they deal with the Government', it is hard to see why the government should not be held to a like standard of rectangular rectitude when dealing with its citizens. (48 Harv.L.Rev. 1299.)" *Farrell* at 628.

Here, there is no issue of the University being bound by promises made by their officers of employees. The promise at issue was made at the highest level by the Regents themselves.

In *Farrell*, counsel for two defendant Counties in a personal injury case advised the plaintiff suing for defective condition of a bridge that she need not bring an action until after she had ascertained the amount of her damages. Plaintiff then waited until after the relevant statute of limitations had expired to file her claim. The Defendants demurred on the grounds that the statutory period to file a claim had run. In reversing the trial court's sustaining of the demurrer, the court emphasized that the Plaintiff's reasonable reliance on the representations of the Defendants worked an injustice which a court of equity was empowered to correct.

Moreover, courts have held that "strong considerations of policy" are needed to deny the application of estoppel where government entities have misled the public. *Co. of San Diego v. Cal. Water and Telephone Co.* (1947) 30 Cal.2d 817. Here, failure to estop the Regents from rescinding their Space Ceiling Resolution will result a manifest injustice. The time has long passed for reviving the lawsuit that was dismissed in exchange for the Space Ceiling. Also, countless neighbors have purchased homes and businesses in the area in reasonable reliance on the permanent Space Ceiling. The permanent commitment made in 1976 should be enforced exactly as it was written - permanent.

3. The Violation of the Space Ceiling Policy is a Significant Impact Under CEQA.

Where a local or regional policy of general applicability, is adopted in order to avoid or mitigate environmental effects, a conflict with that policy in itself indicates a potentially significant impact on the environment. *Pocket Protectors v. Sacramento* (2005) 124 Cal.App.4th 903. Indeed, any inconsistencies between a proposed project and applicable plans must be discussed in an EIR. CEQA Guidelines § 15125(d); *City of Long Beach v. Los Angeles Unif. School Dist.* (2009) 176 Cal. App. 4th 889, 918; *Friends of the Eel River v. Sonoma County Water Agency* (2003) 108 Cal. App. 4th 859, 874 (EIR inadequate when Lead Agency failed to identify relationship of project to relevant local plans). A Project's inconsistencies with local plans and policies constitute significant impacts under CEQA. *Endangered Habitats League, Inc. v. County of Orange* (2005) 131 Cal.App.4th 777, 783-4. The recent *Georgetown Preservation Society v. County of El Dorado* (2018) 30 Cal.App.5th 358 follows *Pocket Protectors* in holding that the fair argument standard applies to a potential inconsistency with a plan adopted for environmental protection.

The Space Ceiling is a policy adopted by the Regents to address the campus' environmental impacts in almost every area: traffic, population, growth inducement, air pollution, noise, etc. The violation of the Space Ceiling is therefore a significant impact that must be analyzed and mitigated under CEQA. The most obvious alternative is for the University to continue to abide by the Space Ceiling. This is a feasible alternative since it was deemed feasible only a few short years ago in the 2014 LRDP.

B. The EIR Fails to Consider Impacts of COVID-19 In the Baseline.

The DEIR dismisses the impacts of COVID-19 on the Project. A revised draft EIR is required to analyze whether and how COVID-19 will impact the need for this massive expansion Project. COVID-19 has dramatically impacted our work practices, increasing the use of telecommuting from home, telemedicine, and remote learning. All of these developments have the potential to reduce the need for office, classroom and clinical space as people are increasingly inclined to work and learn from home. These developments may dramatically and permanently change the nature and need for the Project.

Every CEQA document must start from a "baseline" assumption. The CEQA "baseline" is the set of environmental conditions against which to compare a project's anticipated impacts. Section 15125(a) of the CEQA Guidelines states in pertinent part that a lead agency's environmental review under CEQA:

> "…must include a description of the physical environmental conditions in the vicinity of the project, as they exist at the time [environmental analysis] is commenced, from both a local and regional perspective. This environmental

> setting will normally constitute the baseline physical conditions by which a Lead Agency determines whether an impact is significant." (Emphasis added.)

CEQA Guidelines § 15125(a); see, *Save Our Peninsula Committee v. County of Monterey* (2001) 87 Cal.App.4th 99, 124-125 ("*Save Our Peninsula"*). As the court of appeal has explained, "the impacts of the project must be measured against the 'real conditions on the ground,'" and not against hypothetical permitted levels. *Save Our Peninsula, supra*, 87 Cal.App.4th 99, 121-123.

The outbreak of COVID 19 was first reported on December 31, 2019 in Wuhan China. The Notice of Preparation (NOP) for the UCSF Parnassus Heights campus was issued January 14, 2020. The NOP for the proposed CPHP was published in January 2020, and the baseline conditions contained in this CPHP EIR are generally taken from this time period. However, the CEQA Guidelines and applicable case law recognize that the date for establishing an environmental baseline cannot always be rigid." DEIR at 4.6-6. UCSF is a health based organization, therefore fully aware early on of the implications of the Wuhan outbreak. The DEIR itself acknowledged the potential implications of COVID 19, concluding that:

> "The net effect of the pandemic on the Parnassus Heights campus site development and operations cannot be predicted at this point in time without speculation." DEIR, p. 1-9.

The DEIR concedes COVID 19 has implications for the Project. For example, the objectives for the New Hospital, objectives used in part to dismiss some alternatives, include an increase in beds to provide for inpatient health care in times of severe strain such as the current pandemic. DEIR, p. 6-4. The brief discussion at page 1-9 also acknowledges that UCSF will likely consider operational changes such as increases in telehealth services and telework, among others.

COVID 19 was known at the time of the issuance of the NOP and certainly, as reflected in Section 1.7 of the DEIR, was known prior to circulation of the DEIR for public comment. COVID 19 warrants changes and updates to existing environmental setting information, critical to complete an accurate impact analysis, as well as to the Project Description (e.g., space needs changes given a likely transition as noted in the discussion to telework and telehealth). Significant questions are raised by COVID 19 that have implications to the Project and related impacts – including but not limited to an acknowledgement that UCSF is likely to increase telework, telehealth consultations and remote learning. These are but a few of the changes warranting UCSF to hit pause both to revise the DEIR and to re-engage the public and experts, right-size the Project and evaluate other alternatives that would reduce or eliminate impacts while adhering to the existing space ceiling.

C. The EIR's Alternatives Analysis is Legally Deficient.

An EIR must describe a range of reasonable alternatives to the Project, or to the location of the Project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives. "An EIR's discussion of alternatives must contain analysis sufficient to allow informed decision making." *Laurel Heights I*, 47 Cal.3d at 404. An EIR must also include "detail sufficient to enable those who did not participate in its preparation to understand and to consider meaningfully the issues raised by the proposed project." *Id*. at 405.

CEQA requires public agencies to avoid or reduce environmental damage when "feasible" by requiring "environmentally superior" alternatives and all feasible mitigation measures. CEQA Guidelines § 15002(a)(2) and (3); *see also*, *Berkeley Jets*, 91 Cal. App. 4th 1344, 1354; *Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal.3d 553, 564. The EIR serves to provide agencies and the public with information about the environmental impacts of a proposed project and to "identify ways that environmental damage can be avoided or significantly reduced." CEQA Guidelines § 15002(a)(2). If the project will have a significant effect on the environment, the agency may approve the project only if it finds that it has "eliminated or substantially lessened all significant effects on the environment where feasible" and that any unavoidable significant effects on the environment are "acceptable due to overriding concerns." Pub. Res. Code § 21081; CEQA Guidelines § 15092(b)(2)(A) & (B). A "feasible" alternative is one that is capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social and technological factors. Pub. Res. Code § 21061.1; CEQA Guidelines § 15364.

The lead agency is required to select the environmentally preferable alternative unless it is infeasible. As explained by the Supreme Court, an environmentally superior alternative may not be rejected simply because it is more expensive or less profitable:

> The fact that an alternative may be more expensive or less profitable is not sufficient to show that the alternative is financially infeasible. What is required is evidence that the additional costs or lost profitability are sufficiently severe as to render it impractical to proceed with the project.

Citizens of Goleta Valley v. Bd. of Supervisors (1988) 197 Cal.App.3d 1167, 1180-81; *see also*, *Burger v. County of Mendocino* (1975) 45 Cal.App.3d 322; *County of El Dorado v. Dept. of Transp*. (2005) 133 Cal.App.4th 1376 (agency must consider small alternative to casino project); *Preservation Action Counsel v. San Jose* (2006) 141 Cal. App. 4th 1336.

In addition, an environmentally superior alternative may not be rejected because it does not meet all of the Project's objectives. Inconsistency with only some of the

Project Objectives is not necessarily an appropriate basis to eliminate impact-reducing project alternatives from analysis in an EIR. CEQA Guidelines § 15126.6(c), (f); *see also Watsonville Pilots Assn. v. City of Watsonville* (2010) 183 Cal.App.4th 1059, 1089. Here, the DEIR fails to adopt the environmentally superior alternatives and fails to describe a reasonable range of alternatives.

First, the EIR identifies several significant environmental impacts the Project will have, as well as the project alternatives that may alleviate some of these impacts. However, UCSF failed to adopt the environmentally superior alternative, or any other alternative, that would reduce the Project's impacts and failed to include and analyze several feasible alternatives that are available and would reduce some of the Project's significant impacts. The DEIR refuses to adopt the environmentally superior alternative, Alternative 2: the Reduced Project Alternative, because it would "fail to fully achieve certain Project objectives, and in particular, would not fully meet the CPHP project objectives, for space, urban design and mobility, or for the New Hospital, RAB or Aldea Housing Densification." DEIR, p. 6-71. This justification is insufficient and does not constitute substantial evidence that the environmentally superior alternative is infeasible.

Second, the DEIR fails to select the 2014 LRDP Alternative. The environmental impacts of the 2014 LRDP Alternative were already analyzed in the 2014 LRDP EIR, and this alternative would result in less significant impacts than the proposed Project. However, UCSF did not select this alternative because it "would not achieve the proposed CPHP objectives." DEIR, p. 6-20. Numerous objectives from the 2014 LRDP FEIR remain valid with respect to the proposed Project. *See id*. at 3-13. Dismissing this alternative for this reason fails to demonstrate how this alternative is not feasible.

Additionally, Urban Planner Terrell Watt, a member of the American Institute of Certified Planners, reviewed the DEIR, including the alternatives analysis, and concluded that the DEIR is legally deficient because it "fails to describe a reasonable range of alternatives, or to the location of the Project, which would feasibly attain most of the basic objectives of the Project but would avoid or substantially lessen any of the significant effects of the Project, and evaluate the merits of the alternatives." Exhibit B,,p. 21. Specifically, the DEIR improperly rejected feasible off-site alternatives and omits other feasible off-site alternatives. *Id*. at 22. For example, feasible alternatives to the Project that would reduce or eliminate the Project's significant impacts that the DEIR briefly considered but dismissed include the following: (1) No New Hospital at Parnassus Heights Campus Site/Implement Phase 2 of Medical Center at Mission Bay Campus Site; and (2) New Hospital at Mount Zion Campus Site. *Id*.

The reasons provided for dismissing the alternative of a new hospital at Mission Bay comes down to the alternative's reported failure to meet every focused Project objective and a purported conflict with the 2014 LRDP and CPHP. *Id*. Specifically, the DEIR states that the alternative would not meet some of the Project objectives and

would conflict with several 2014 LRDP and CPHP objectives including but not limited to adequate space to foster collaboration and to facilitate inter-dependence and connectivity for operational efficiency, adequate clinical and administrative support and alignment with other programs, increase in beds, and modern industry standards including seismic activity. *See* DEIR, p. 6-55. The discussion concedes that the alternative would reduce significant wind, cultural, and construction impacts, but that in doing so, it would likely also result in increased cross-town traffic between the Parnassus and Mission Bay campus sites. However, the discussion failed to analyze a combination of a smaller, new hospital at Parnassus in combination with Mission Bay, which is a feasible option that has the potential to address total need and allow phasing to accommodate patients and services. Exhibit B, p. 22. The DEIR's justification for dismissing this alternative is not justified. First, the alternative would meet most of the Project's objectives. *Id*. Second, the argument that the alternative would increase cross-town traffic is not supported by any evidence or analysis. *Id*. at 22-23. Lastly, the conflicts with the 2014 LRDP are not persuasive since that document is being amended to break the space ceiling and this alternative would not require that significant amendment to the LRDP. *Id*. at 23. "In fact, the Mission Bay Hospital was justified in part by the development cap at the Parnassus Campus." *Id*. This alternative must be fully analyzed in a revised and recirculated DEIR, including additional facts and analysis to support the arguments concerning the alternatives analysis.

The DEIR also dismisses the alternative of a new hospital at the Mount Zion Campus Site without actually analyzing the alternative, stating that it "would be less than ideal and inefficient" to have UCSF hospitals at three different sites, and that it would not help achieve the benefits realized through interdisciplinary collaboration and convergence between clinical care, research and education, land acquisition would be difficult, and citing undisclosed conflicts with the 2014 LRDP and CPHP objectives. DEIR, p. 6-57. Locating the proposed hospital at the Mount Zion campus would "reduce the significant wind impact . . ., avoid demolition of the LPPI (individually eligible for listing in the National and California Registers), and avoid a number of temporary construction and operational impacts associated with the New Hospital at the Parnassus Heights campus site." *Id*. The Mount Zion campus site is 2 miles from the Parnassus campus site and several of the existing buildings, including the hospital, must be retrofitted or demolished due to seismic issues. *See* UCSF 2014 LRDP, p. 89. The 2014 LRDP even states that the demolition of outdated and seismically compromised buildings would allow for the construction of new space to accommodate clinical programs at the Parnassus site. *Id*. at 91. The DEIR must analyze the feasibility of this alternative due and compare it with the other identified alternatives.

Rejection of the Mission Bay and Mount Zion sites for a new hospital, either in lieu of or in combination with a smaller hospital at the Parnassus campus, is not supported by the evidence and analysis provided and both require full analyses in a revised and recirculated DEIR.

Lastly, the DEIR also fails to mention their Hunters Point site. UCSF owns 3.8 acres in Hunters Point with two single story buildings used for an animal care facility. UCSF 2014 LRDP, p. 117. At the time the 2014 LRDP was published, the City had approved the Candlestick-Hunters Point Shipyard Development Plan, an extensive mixed-use redevelopment plan for the area that would include housing, retail, office, commercial, industrial, and open use spaces. *See id*. Due to UCSF's facilities at this site being in relatively poor condition, UCSF was exploring the possible relocation of those functions and occupants and potential relinquishment of the site. *Id*. However, healthcare, a hospital, and economic development would be greatly needed in this community, especially with the progression of the Candlestick-Hunters Point Shipyard Development Plan. Since UCSF does not have future plans for this site, it should consider the feasibility of locating a portion of the proposed Project at this location.

The DEIR rejects many of the off-site alternatives because they are off-site. This makes a mockery of CEQA's requirement for consideration of off-site alternatives. The courts have held that if environmentally superior alternative sites are available for a project, it would be inconsistent with CEQA's purposes to ignore off-site alternatives simply because on-site alternatives have been considered. In *Citizens of Goleta Valley v Board of Supervisors* (1988) 197 Cal.App.3d 1167, 1179 (*Goleta I*), the court held that the EIR for a proposed resort hotel should have considered alternative locations for the project. Observing that the public need for the hotel should be served at minimal environmental expense, the court concluded that "[r]eason requires that the agency charged with the duty to protect the environment compare impacts at feasible alternative locations." *Id*. at 1180. If off-site alternatives can be rejected simply because they are off-site, then the CEQA requirement for analysis of off-site alternatives becomes meaningless. A revised draft EIR is required to analyze and consider the above alternatives and to select the environmentally superior alternative unless it is truly infeasible.

D. The EIR Improperly Delays the Analysis of the Hospital.

The DEIR fails to describe details of several elements of the hospital, contending that sufficient details are not known to allow a detailed analysis of impacts such as wind. However, the DEIR reveals that the University of aware of many of the details of the Project, including the specific height and sizes of buildings - the extent that it was possible to create visual representations of all of the buildings. Since the University is aware of these details, a more detailed analysis must be provided in the DEIR.

The courts have consistently held that an "accurate and stable project description" is a bedrock requirement of CEQA—the *sine qua non* (that without which there is nothing) of an adequate CEQA document:

> Only through an accurate view of the project may affected outsiders and public decision-makers balance the proposal's benefit against its environmental cost,

> consider mitigation measures, assess the advantage of terminating the proposal (i.e., the "no project" alternative) and weigh other alternatives in the balance. An accurate, stable and finite project description is the sine qua non of an informative and legally sufficient EIR.

Inyo v. Los Angeles (1977) 71 Cal.App.3d 185, 192-93. The ability of informed citizens to participate in environmental review is a key component of CEQA. *Washoe Meadows v. Dept. of Parks and Rec*. (2017) 17 Cal.App.5th 277, 285 ["Informed public participation is essential to environmental review under CEQA."]; *Inyo*, 71 Cal.App.3d at 192 ["The EIR process facilitates CEQA's policy of supplying citizen input."]. Through the EIR process, CEQA "provide[s] public agencies and the public in general with detailed information about the effect which a proposed project is likely to have on the environment." *Washoe, supra*, 17 Cal.App.5th at 286 [quoting Pub. Res. Code § 21061].

The court recently noted that the requirement for an accurate, stable, and finite project description has been "reiterated in a number of cases since *County of Inyo*." *Stop the Millenium Hollywood v. Los Angeles* (2019) 39 Cal.App.5th 1, 17. In *Millennium*, the court evaluated the project description for a large mixed-use development, which described three conceptual development scenarios that would satisfy the project's Development Agreement. *Id*. at 9-10. The scenarios presented in the DEIR only depicted potential massing options that might have been developed and, thus, "the public had no idea how many buildings or towers would be built and where they would be located on the project site." *Id*. at 11. The court held that the DEIR did not meet CEQA's requirement for an accurate, stable or finite proposed project because "it fails to describe the siting, size, mass, or appearance of any building proposed to be built at the project site" and "presents different conceptual scenarios that Millennium or future developers may follow for the development of this site." *Id*. at 18. Notably, the court noted that the failure to include an accurate, stable, and finite project description "was an obstacle to informed public participation 'even if we cannot say such input would have changed the project ultimately selected and approved.'" *Id*. at 20 [quoting Washoe, supra, 17 Cal.App.5th at 290] [emphasis added].

The DEIR for CPHP is similar to the one rejected in *Millenium*. It fails to provide detail of the project, hampering informed public comment. A revised draft EIR is required to provide requisite details of the Project and its impacts.

E. The EIR Impermissibly Defers Mitigation.

Feasible mitigation measures for significant environmental effects must be set forth in a CEQA document for consideration by the lead agency's decision makers and the public before certification of the CEQA document and approval of a project. The formulation of mitigation measures generally cannot be deferred until after certification and approval of a project. CEQA Guidelines, section 15126.4(a)(1)(B) states: "Formulation of mitigation measures should not be deferred until some future time.

However, measures may specify performance standards which would mitigate the significant effect of the project and which may be accomplished in more than one specified way."

"A study conducted after approval of a project will inevitably have a diminished influence on decisionmaking. Even if the study is subject to administrative approval, it is analogous to the sort of post hoc rationalization of agency actions that has been repeatedly condemned in decisions construing CEQA." *Sundstrom v. County of Mendocino* (1988) 202 Cal.App.3d 296, 307. "[R]eliance on tentative plans for future mitigation after completion of the CEQA process significantly undermines CEQA's goals of full disclosure and informed decisionmaking; and[,] consequently, these mitigation plans have been overturned on judicial review as constituting improper deferral of environmental assessment." *Communities for a Better Environment v. City of Richmond* (2010) 184 Cal.App.4th 70, 92. Moreover, by deferring the development of specific mitigation measures, UCSF is effectively precluding public input into the development of those measures. CEQA prohibits this approach.

Here, The DEIR is rife with impermissible deferred mitigation for several of the Project's environmental impacts.

1. The EIR defers mitigation of the Project's wind impacts.

The DEIR admits the Project's wind impacts will be significant and unavoidable with mitigation. DEIR, p. 4.1-46. However, the DEIR defers the formation of actual mitigation measures to lessen the Project's wind impacts to an undetermined future time. *See id*. at 4.1-47. Specifically, mitigation measure AES-4 requires UCSF to engage a qualified wind consultant to conduct wind tunnel testing of the proposed buildings with facades 80 feet high or over to determine whether the buildings would result in exceedances of San Francisco's 26-mph pedestrian wind hazard criterion. *Id*. If the consultant does find an exceedance, UCSF shall work with the consultant to identify feasible mitigation strategies such as design changes. *Id*. UCSF's delay in mitigating the Project's potential wind impacts undermines CEQA's goals of full disclosure and informed decisionmaking. Moreover, UCSF is preventing the public from providing input on the development of these measures and leaving them up to the sole discretion of UCSF and the wind consultant it hires, violating CEQA.

2. The EIR defers mitigation of the Project's impacts on cultural resources.

The DEIR also admits that the Project as proposed would result in a significance and unavoidable adverse change in the significance of known historical resources, in particular the UC Hall which includes the Bernard Zakheim murals. DEIR, p. 4.4-12. During the 1930s, Zakheim, a student of Diego Rivera, was one of the leading artists in the area who were creating major public art under the auspices of the New Deal art

programs. *See* Exhibit C. The ten murals that make up Zakheim's *History of Medicine* (1936-39) constitute one of this region's largest New Deal art projects by a single artist. *See id*. Despite housing such important artwork, the Project proposes to demolish UC Hall. DEIR, p. 4.4-12.

The DEIR contains several mitigation measures for the project's impacts to cultural resources, but all of them are improperly deferred to an uncertain time. For example, mitigation measure CUL-1a requires, at some point prior to any demolition work or significant alterations initiated at the known historical resources, "UCSF shall ensure that a qualified architectural historian who meets the Secretary of the Interior's Professional Qualification Standards identifies character-defining features of each historical resource." *Id*. at 4.4-19. The DEIR provides no justification for delaying this mitigation measure until after the EIR has been certified. The identification of character-defining features for historical resources on the Project site can and must be done prior to the approval of the Project so decision-makers and the public have sufficient information to determine the Project's impacts on cultural resources.

Mitigation measure CUL-1b also improperly defers mitigation by requiring a qualified architectural historian to thoroughly document each building and associated landscaping setting, which will include photography and a written documentary record of the buildings, at some point "[p]rior to any demolition work or significant alterations initiated at the known historical resources." *Id*. This measure suffers the same fatal flaws as CUL-1a – the DEIR does not provide any justification why this measure must be performed at some uncertain time, and should in fact be performed prior to the approval of the Project.

Mitigation measure CUL-1c requires UCSF to determine whether any character defining features of an individual historic resource may be salvaged "[p]rior to the demolition or significant alteration activities." *Id*. at 4.4-20. If features can be salvaged, "a Salvage Plan shall be prepared by a qualified architectural historian or historic architect." *Id*. The identification of historic resources on the Project site that can be salvaged must be done prior to the preparation of an EIR. The DEIR's conclusion that the Project will have significant and unavoidable impacts on cultural resources cannot be supported without such an analysis. Further, by deferring this analysis and the preparation of Salvage Plans for such resources, UCSF is undermining the full disclosure of the Project's impacts to decision-makers and the public, and preventing them from commenting on or analyzing the substantive mitigation measures for such impacts.

Lastly, mitigation measure CUL-1d requires UCSF Planning staff to work with a conservator to develop and implement a digital imaging and virtual preservation proposal for the Zakheim murals at some point "[p]rior to the commencement of demolition activities at UC Hall." *Id*. Not only does this measure suffer the same deferred mitigation flaws as identified for the other measures above, but it is attempting

to stand in place of feasible mitigation that would in fact preserve the murals. The DEIR states that the cost to physically preserve the murals by removing and relocating them, $7.6 million, "is prohibitive in light of UCSF's primary responsibility to support its academic health care mission." *Id*. at 4.4-15. UCSF instead is threatening to destroy the murals unless another third party, including Zakheim's family, will pay to preserve the murals. *Id*. $7.6 million is a drop in the bucket for the cost of the Project and the many measures UCSF proposes to implement for the Project that have nothing to do with its "primary responsibility to support its academic health care mission." UCSF has failed to otherwise explain why preserving the murals is not feasible.

3. The EIR defers mitigation of the Project's hazards and hazardous materials impacts.

The DEIR states that the Project may have impacts due to naturally occurring asbestos but any impact will be mitigated to less than significant due to the implementation of mitigation measure HAZ-1. DEIR, p. 4.8-16. However, HAZ-1 requires an Excavation Management Plan to be prepared at a later time. *See id*. at 4.8-18. This Excavation Management Plan is to be prepared to determine the absence or presence of naturally occurring asbestos in materials to be excavated yet the DEIR fails to provide a justification or explanation for why this Excavation Management Plan has not already been conducted in order to inform the decision-makers and the public reviewing the DEIR. UCSF should prepare the Excavation Management Plan prior to the approval of the Project so that the Project's potential hazardous impacts are known and fully analyzed in the DEIR, and so decision-makers and the public can propose mitigation measures and comment on the analysis.

The DEIR also proposes mitigation measure HAZ-4, which requires an environmental consulting firm to prepare a Soil Management Plan to include measures to address protocols for identifying, handling, and characterizing suspect contaminated soils at some point "[p]rior to development of the [Project]." *Id*. at 4.8-23. Again, this mitigation measure is improperly deferred and UCSF fails to provide an explanation why this Soil Management Plan could not be prepared prior to the DEIR. By deferring the development of this plan, UCSF is precluding the decision-makers and the public from reviewing the plan and commenting on its adequacy.

4. The EIR defers mitigation of the Project's noise impacts.

The DEIR includes mitigation measures NOI-1a, NOI-1b, and NOI-1c to reduce the Project's construction noise impacts. DEIR, p. 4.11-18. However, NOI-1a and NOI-1b are improperly deferred. For example, NOI-1a requires UCSF contractors to employ site-specific noise attenuation measures during construction of the Project, which will be included in a Noise Control Plan "that shall be submitted for review and approval by UCSF to ensure that construction noise is consistent with the standards set forth in the City's Noise Ordinance." *Id*. The DIER goes on to list several noise control strategies

that must be included in the Noise Control Plan. *Id*. UCSF again improperly excludes decision-makers and the public from participating in the review of this plan, and fails to explain why this plan could not be prepared prior to the DEIR. In deferring the formation of the mitigation measure to an unknown future time, UCSF cannot conclude that NOI-1a will in fact mitigate construction noise.

Further, NOI-1b suffers from similar flaws in that measures to minimize potential impacts of construction noise occurring outside the established work hour limits will be determined at a later time. *See id*. at 4.11-19. Additionally, NOI-1b lists several mitigation measures that *may be* included to reduce these impacts, but fails to include any concrete measures to show this impact will be mitigated. *Id*.

The DEIR also concludes that the Project's operational noise impacts will be less than significant with mitigation. *Id*. at 4.11-26. However, NOI-2 also improperly defers mitigation. For example, an acoustical consultant will be retained to review mechanical noise to determine specific noise reduction measures to reduce noise to comply with the City's Police Code. *Id*. at 4.11-28. NOI-2 also contains a list of possible noise reduction measures but fails to make them requirements. *Id*. Again, the deferment of the analysis of the operational noise and selection of mitigation measures prevents the disclosure of the Project's impacts and potential mitigation measures to decision-makers and the public. Without concrete and required mitigation, this measure cannot be relied upon to conclude that the Project will have less than significant operational noise impacts.

Lastly, the DEIR concludes that the Project's groundborne vibration and noise levels due to construction activities will be less than significant with mitigation. DEIR, p. 4.11-30. However, measure NOI-3b improperly defers this mitigation. NOI-3b requires UCSF to evaluate the presence of vibration-sensitive equipment within 150 feet of construction and demolition areas, and any sensitive equipment shall be evaluated for the existing extent of vibration isolation and relocated or further embellish isolation, as it is warranted. *Id*. The Project already lays out where construction will take place, even on future projects within the CPHP, so there is no reason why the evaluation of vibration-sensitive equipment is deferred to an unknown future time. Again, UCSF is preventing decision-makers and the public the opportunity to evaluate the Project's impacts and commenting on the proposed mitigation measures. Without this analysis and the deferred mitigation, this measure cannot be relied upon to conclude the Project will have less than significant groundborne vibration and noise levels.

5. The EIR defers mitigation of the Project's travel condition impacts.

The DEIR states that the Project's construction activities will have a less than significant impact with mitigation on the travel conditions along sidewalks and roadways serving the Project site. DEIR, p. 4.15-49. The DEIR relies on mitigation measure TRANS-5 to reduce this to a less than significant impact. *Id*. TRANS-5 requires construction contractors to prepare a traffic control plan for major phases of the

Project's construction, as well as meet with City agencies to coordinate feasible measures to reduce traffic congestion. *Id*. at 4.15-49. UCSF fails to provide an explanation for why the traffic control plan could not be prepared prior to the DEIR and why decision-makers and the public are excluded from reviewing and commenting on the mitigation measures that will be selected for the traffic control plan. By deferring this mitigation and excluding decision-makers and the public from reviewing and commenting on such measures, UCSF cannot rely on TRANS-5 to conclude the Project will have less than significant impact on the travel conditions along sidewalks and roadways serving the Project site during construction.

F. The EIR Impermissibly Relies on CEQA Section 21099.

The DEIR states that under CEQA section 21099, aesthetics and parking impacts do not need to be considered because this is an "employment center project" on an "infill site." DEIR, p. 4.0-3. The DEIR's conclusions are erroneous, and a revised EIR is required to analyze aesthetic and parking impacts. PRC 21099(d)(1) defines "employment center project" as follows:

> (a) For purposes of this section, the following terms mean the following:
> 1. 'Employment center project' means a project located on property **zoned for commercial uses** with a floor area ratio of no less than 0.75 and that is located within a transit priority area.

The Project area is not zoned for commercial uses. The DEIR at 4.10-7 states that the "campus site is primarily located in the City's P (Public) Zoning District…. Housing located along Third and Fifth Avenues is designated by the City as Residential House District, Two-Family (RH-2)." Since the Project site is not zoned commercial, 21099 does not apply at all.

Furthermore, 21099(e) states, "This section does not affect the authority of a public agency to establish or adopt thresholds of significance that are more protective of the environment." San Francisco has adopted thresholds that are more protective of the environment. The voters adopted Measure M, adding Planning Code section 101.1, which protects public open space vistas. General Plan Urban Design Element Policy 1.1 protects public views of open space and water. Since the City and voters of San Francisco have adopted more protective thresholds, those thresholds apply and must be considered.

The DEIR is therefore misleading as an informational document since it falsely states that 21099 applies to the Project and that aesthetic and parking impacts need not be considered. A revised draft EIR is required to correct this misinformation and to fully analyze and mitigate the Project's significant aesthetic and parking impacts.

G. The EIR Fails to Adequately Analyze the Project's Aesthetic Impacts.

If a project has any substantial negative effect on views and other features of beauty, it may have a significant environmental impact under CEQA. *See Ocean View Estates Homeowners Association, Inc. v. Montecito Water District* (2004) 116 Cal.App.4th 396, 401; *see also Quail Botanical Gardens Foundation, Inc. v. City of Encinitas* (1994) 29 Cal.App.4th 1597, 1604. If a project has a substantial adverse effect on a scenic vista, will substantially damage scenic resources, including scenic highways, or substantially degrade the existing visual character or quality of the site and its surroundings, it may have a significant aesthetic impact. *See* CEQA Guidelines, Appendix G.

The DEIR states that the Project would have a less than significant impact on scenic vistas. DEIR, p. 4.1-27. However, land use planner and Principal of Ikeda Consulting Jared Ikeda reviewed the DEIR and the Project's visual impacts and concluded that the Project will result in a significant change to public views and will change the visible skyline. *See* Exhibit D.

Specifically, a "particularly significant local view point is the trail head near the intersection of Farnsworth Lane and Edgewood." *Id*. at 3. The addition of a 294 foot high hospital will be seen from this vantage point and blocks views to the west, which "is a significant change to the public view and the inherent quality of the trail head and experience of accessing and walking this trail." *Id*. at 4. While the existing trees in this area and along the trail leading down screen and filter the vistas, the new hospital will entirely block scenic vistas and dominate the view. *Id*. This is a significant impact that must be analyzed and mitigated in the DEIR.

Additionally, the neighborhoods to the east, and views from streets such as Edgewood and Belmont and Willard will also be visually impacted by the new hospital. *Id*. The hospital will also "block views to Mt Sutro and the forest reserve from areas north of Parnassus Ave and Irving Street, and the visual experience of seeing a natural setting of a forested hillside from the local sidewalks and streets will be changed to one of a large urban building." *Id*. Furthermore, the addition of the new hospital "will undoubtedly change the visible skyline." *Id*. at 5. This is a noticeable chance and should be addressed in the context of the San Francisco General Plan Urban Design Element. *Id*. at 5-6.

San Francisco's General Plan Urban Design Element first policy is to "recognize and protect major views in the city, with particular attention to those of open space and water." San Francisco General Plan, Urban Design Element, Policy 1.1. Specifically, "[p]rotection should be given to major views whenever it is feasible, with special attention to the characteristic views of open space and water that reflect the natural setting of the city and give a colorful and refreshing contrast to man's development." *Id*.

However, the DEIR ignores this policy and fails to acknowledge the proposed hospital's impact on views of the Pacific Ocean. *See* Exhibit D, pp. 4-5.

A revised and recirculated draft EIR is required to analyze and mitigate the Project's significant aesthetic impacts. Feasible mitigation would include reducing the height or moving the 297 foot proposed hospital since it is responsible for most of the Project's adverse aesthetic impacts.

H. The EIR Fails to Adequately Analyze the Project's Impacts on Shadows.

The DEIR states that implementation of the Project would not create new shadows in a manner that would substantially and adversely affect the use and enjoyment of publicly accessible open spaces. DEIR, p. 4.1-74. However, as Mr. Ikeda points out, shadows affect the direct exposure to sun radiation, which can affect the temperature of the surface that is struck by sunlight. Exhibit D, p. 6. The comfort and attractiveness of these areas to pedestrians may be adversely affected yet are not addressed in the EIR. *Id*. Further, the city's Urban Design Guidelines state that plazas or parks located in the shadows cast by large buildings are unpleasant for users and large buildings can be oriented to minimize shadows falling on public or semi-public open space. *See id*. The EIR should take this into account and mitigate the Project's shadows in such a way as to minimize them on public or semi-public open spaces. Also, the DEIR clearly shows that the massive new hospital will cast shadows deep into Golden Gate Park. *See* DEIR, pp. 4.1-62, 4.1-68). The shadow renderings show shadows extending far into Golden Gate Park, near the baseball diamonds known as "Big Rec." The DEIR dismisses this impact arguing that the impact is on baseball fields that are rarely used in the morning. But this area is used for many things other than baseball. It is heavily used for soccer, tai-chi, frisbee, running and other activities at all hours of the day and at all times of the year. The shadowed area includes hiking/jogging trails which are very popular for dog walking, running, hiking and other activities at all hours. This is one of the most heavily used areas of the popular park.

San Francisco's Shadow Policy states that a project over 40 feet in height has a significant impact if it will cause shadows on a property under the jurisdiction of San Francisco's Department of Recreation and Parks. San Francisco Planning Department Shadow Analysis Procedure, July 2014; San Francisco Planning Code section 295.

Since the DEIR's own analysis shows that the massive 300- foot hospital casts shadows deep into Golden Gate Park, this is a significant impact that must be analyzed and mitigated in a revised DEIR. An obvious mitigation that should be analyzed in the revised DEIR is to relocate the hospital or make it much shorter to reduce its shadow impacts.

I. The DEIR Fails to Adequately Analyze the Project's Impacts on Biological Resources and Fails to Mitigate Impacts of the Project on Numerous Sensitive Species.

Expert biologist Shawn Smallwood, Ph.D. has reviewed the DEIR's discussion of biological resources. *See* Exhibit E. Drawing on his familiarity with the project area and decades of studying and surveying many of the species encountered at the site, Dr. Smallwood has prepared a critique of the DEIR, pointing out numerous shortcomings in the baseline assessment of the presence of species at the site, failures to evaluate impacts that will result from the Project, and numerous instances where the DEIR's assertions are insufficient or not supported by substantial evidence.

1. The DEIR provides an inadequate baseline and fails to adequately analyze the Project's impacts on biological resources.

In visiting the Project site, Dr. Smallwood observed at least 23 species of vertebrate wildlife, including 5 special-status species. Exhibit E, p. 2. The Golden Gate Audubon Society ("GGAS") tallied 47 species of birds on Mount Sutro Open Space Reserve in 2020. *See id*. at 5. eBird records further indicate a long list of species use Mount Sutro Open Space Reserve, the Parnassus Campus, and Aldea Housing. *Id*. While these sources documented 40 special-status species of birds, the EIR only addresses 6 special-status species. *Id*. at 9. Of these 6 special-status species, the EIR dismisses the likelihood of occurrence of two of them, assigns low likelihood of occurrence to another three, and assigns only a moderate likelihood of another, despite all of these species being documented on the site or surrounding area. *Id*. Furthermore, in a report prepared for UCSF, GGAS reported sighting 7 special-status species of birds that are not addressed in the EIR. *Id*. at 9-10. The EIR's attempts to justify this by claiming the Project site and surrounding area lacks the habitats necessary to support special-status species. *See* DEIR, pp. 4.3-14-4.3-15. However, as Dr. Smallwood notes, the EIR describes artificially narrow habitat needs for these species. *See* Exhibit E, p. 10. By narrowing down the species the EIR states is found at the Project site, the EIR also narrows its analysis of the Project's impacts to biological resources. In failing to establish an adequate baseline of biological resources, the EIR fails to adequately analyze the Project's impacts to biological resources.

The EIR also states that 0.15 acres of the Mount Sutro Open Space Reserve would be removed to facilitate the tallest of the proposed buildings on the campus, but would redesignate 0.4 acres to Open Space Reserve from Support. DEIR, p. 3-39. However, this 0.4 acres is already forested and otherwise indistinguishable from the forested landscape of the surrounding areas of Mount Sutro Open Space Reserve. Exhibit E, p. 7. "From the perspective of wildlife, the swap in land designations results in a 0.15-acre habitat loss," which the EIR fails to analyze. *Id*. Although "[m]uch more substantial impacts than mere acreage loss would result from the heights, extent, and structural attributes of the proposed new buildings." *Id*. Erecting tall structures into the

aerohabitat of volant wildlife results in collision mortality and interference with wildlife movement, as further described below.

2. The DEIR fails to adequately address the Project's impacts on wildlife resulting from bird strikes.

Migratory or dispersing birds attempting to stop over at the habitat island that Mount Sutro represents in San Francisco, and most birds leaving Mount Sutro to continue their migration or dispersal, "would expend extra energy – energy needed for long-distance flights – negotiating their way around the [Project's] buildings, but some would collide with the buildings after becoming disoriented or misled by the buildings' nighttime lights and by transparent and reflective glass windows." Exhibit E, p. 8. The DEIR acknowledges that the Project could result in an increase in bird collisions with buildings on the campus site, but concludes that by implementing mitigation measures BIO-2a, Prevention of Harm to Migrating Birds during Construction, and BIO-2b, Bird-Safe Building Treatments, the potential impacts to birds will be less than significant. Specifically, "[i]mplementation of these measures would reduce the potential adverse effect on resident and migrating birds to a less than significant level by reducing injuries associated with night lighting during construction and operation of the new facilities, and requiring design features be incorporated into new structures that would make buildings more visible to birds." DEIR, p. 4.3-19. This discussion of the Project is not sufficient to describe the Project's impacts on birds colliding with the building's windows. By failing to adequately quantify the Project's impacts due to bird collisions, the DEIR misrepresents the Project's potential impacts and fails to give any sense of the magnitude of this potential impact.

Full disclosure of the potential impact on wildlife of window collisions is especially important because "[w]indow collisions are often characterized as either the second or third largest source of human-caused bird mortality." Exhibit E, p. 17. Dr. Smallwood reviewed the DEIR, and even though it lacking details about the design of the proposed buildings, including the amount of glass, types of glass, and structural contexts of glass, predicted the Project will result in 6,176 bird deaths per year as a result of bird collisions. *Id*. at 16. The vast majority of these deaths are protected under Fish and Game Code section 3513. *Id*. If the Project moves forward as proposed, the Project will cause significant impacts on birds as a result of window collisions, despite the proposed mitigation measures. *Id*.

3. The DEIR fails to adequately analyze the Project's impacts on wildlife movement.

The DEIR asserts that since the Mount Sutro Open Space Reserve "does not provide contiguous habitat for any terrestrial species," the Project's "activities would have overall minimal impact on the Reserve's function as a migratory stopover," and implementation of several mitigation measures designed to address window collisions

would result in a less than significant impact on wildlife movement. DEIR, p. 4.3-19. However, the primary phrase of the CEQA wildlife corridor standard goes to wildlife movement regardless of whether the movement is channeled by a corridor. Exhibit E, p. 17. Sites such as the Project site "is critically important for wildlife movement because it composes a diminishing patch of natural cover within an expanse of anthropogenic land uses, forcing more volant wildlife to use the site as a stopover and staging habitat during migration, dispersal, and home range patrol." *Id*.

Further, even if mitigation measures do succeed in lessening bird-window collision mortality, "it will have no effect on the project's impacts to movement of wildlife that survive their encounters with the buildings." *Id*. Beyond window collisions, the Project's tall buildings would pose an additional barrier. "Many birds and bats attempting to fly to or from Mount Sutro would have to detour around the buildings, risking predation by peregrine falcons which exploit these types of situations, and costing valuable energy needed for long-distance travel. Inserting multiple tall buildings into the aerohabitat of birds and bats would cause significant adverse impacts to those birds and bats." *Id*.UCSF must therefore go back and adequately analyze the Project's impacts on wildlife movement.

4. No meaningful discussion of the Project's cumulative effects on wildlife is included in the DEIR.

Recognizing that several projects may together have a considerable impact, CEQA requires an agency to consider the "cumulative impacts" of a project along with other projects in the area. Pub. Res. Code § 21083(b); CEQA Guidelines § 15355(b). If a project may have cumulative impacts, the agency must prepare an EIR, since "a project may have a significant effect on the environment if '[t]he possible side effects of a project are individually limited but cumulatively considerable.'" *CBE*, 103, Cal.App.4th at 98; *Kings County Farm Bur*., 221 Cal.App.3d at 721. It is vital that an agency assess "'the environmental damage [that] often occurs incrementally from a variety of small sources . . . .'" *Bakersfield Citizens for Local Control v. City of Bakersfield* (2004) 124 Cal.App.4th 1184, 1214 ("*Bakersfield Citizens*").

Rather than assess the cumulative wildlife impacts of the Project, the DEIR states that due to the urban setting, implementation of the Mount Sutro Open Space Vegetation Management Plan, and the 2014 LRDP EIR mitigation measures, the Project would have a less than significant cumulative impact on biological resources. *See* DEIR, pp. 4.3-23-4.3-24. As Dr. Smallwood points out, "[i]f cumulative effects were indeed merely residual impacts of inadequately mitigation, then CEQA would require an inadequate mitigation analysis instead of a cumulative impact analysis." Exhibit E, p. 18.

Redevelopment of existing structures in already developed areas does in fact pose potentially severe bird-window collision impacts despite the assertion that redeveloped areas have already removed all biological resources. *Id*. As Dr. Smallwood

points out, "[j]ust as the project proposes potentially severe bird-window collision impacts, so too do new buildings going up in place of older buildings. New buildings in San Francisco are glass-covered." *Id*. An adequate cumulative impacts analysis would therefore "include a tally of predicted or estimated fatality rates of birds colliding with glass facades of recently built, planned, and foreseeable buildings in San Francisco." *Id*. Due to the Project's impacts, and those of other buildings in San Francisco, a serious cumulative impacts analysis is warranted. Bird abundance across North America has declined 29% over the last 48 years, which will result in substantial ecological and economic consequences. *See id*. Since windows are recognized as one of the principal anthropogenic sources of bird mortality, their cumulative effects among San Francisco's new buildings must be analyzed and mitigated. As a result, the DEIR's discussion of cumulative wildlife impacts is entirely deficient.

5. The DEIR's proposed mitigation measures will not reduce impacts to biological resources to less-than-significant levels.

The EIR proposes to mitigate potentially significant impacts to birds and bats through mitigation measures BIO-1c and BIO-1d, in which a biologist will conduct pre-construction surveys for nesting birds within 250 feet of the construction area and for roosting bats within 50 feet of the construction area within 7 days prior to initiation of construction activities. *See* DEIR, pp. 4.3-15-4.3-16. However, Dr. Smallwood disagrees that these measures would reduce the Project's impacts to less than significant because preconstruction surveys are limited in their mitigation effect as they detect only small fractions of bird nests and roosting bats occurring on a project site. Exhibit E, p. 18.

"Preconstruction surveys alone fail to prevent the deaths of most of the animals at risk, nor do they do anything to prevent habitat destruction and lost reproductive capacity." *Id*. at 19. Instead, detection surveys should be performed, and early enough to not only inform preconstruction surveys but also the public and decision-makers about potential project impacts. *Id*. "Take avoidance surveys cannot lessen impacts to nesting birds and roosting bats without first informing the public and decision-makers of the magnitude of potential impacts, nor without informing survey personnel where to look." *Id*.

The EIR also proposes to mitigate the Project's potentially significant impacts to birds due to collisions with the Project's windows through mitigation measure BIO-2b. BIO-2b includes the following measures: (1) minimizing unnecessary light emissions from interior and exterior portions of buildings; (2) exploring and adopting window glazing options such as marked glass or UV-reflective glass; and (3) minimizing light and glare of facades through orientation of the building, choice of materials, and landscaping. *See* DEIR, p. 4.3-20. However, Dr. Smallwood does not believe this mitigation measure will reduce the Project's impacts to birds due to window collisions to less than significant. San Francisco's 2011 standards for bird-safe buildings included glass and façade treatments and lighting treatment measures that were often of

uncertain efficacy and much has been learned by research performed since 2011. Exhibit E, p. 19. As for the third of the proposed measures in the EIR, minimizing light and glare of facades through orientation of buildings, etc., the EIR fails to identify the materials to be used and is unclear about whether and how building orientation would be decided to minimize collision risk, nor does it indicate the structural materials to be used on any particular portions of buildings. *See id*. at 19-20. While the building orientations are already decided, the decision of materials to be used are deferred to an unspecified later date. *Id*. at 20. In order to inform this measure, behavioral ecologists need to survey the project area to adequately characterize flight patterns and reactions to existing buildings, and surveys are needed to learn how many of each bird species fly through the area and at what times of day and night. *Id*.

6. The DEIR fails to analyze all potential feasible mitigation measures to reduce the project's impacts to biological resources.

As Dr. Smallwood points out, the most effective measure to minimize collision fatalities is careful siting. *Id*., at 21.

> There are two types of siting: Macro and micro. Macro-siting refers to selection of a project site, whereas micro-siting refers to selection of locations for project components within the boundary of a project site. Both levels of siting can substantially mitigate impacts to wildlife, but macro-siting usually offers the greatest opportunity for minimizing impacts. Applying macro-siting to the proposed project would consider impacts to wildlife if the new square footage was located at the site of UCSF's Medical Center at Mount Zion, or in Bayview at the Hunters Point shipyard, as examples. Of course, macro-siting must also consider project objectives but can also consider collateral opportunities for students and host communities. Other factors considered, siting the project farther from Mount Sutro Open Space Reserve would vastly lessen impacts to birds.

Id. Micro-siting at the Project site to reduce the Project's impacts to birds would require reducing the size of the Project and minimizing the extent of windows on building facades, reducing building heights, and siting the taller buildings farther from the steep, forested slopes of Mount Sutro. *Id*. UCSF should investigate these siting measures and implement them if determined to be feasible.

J. Air Quality.

We submit herewith the expert comments of Dr. Paul Rosenfeld, Ph.D., and Matthew Hagemann, C.Hg., of the consulting firm, Soil Water Air Protection Enterprise (SWAPE). *See* Exhibit F. SWAPE demonstrates that the air quality analysis in the DEIR is patently inadequate. The SWAPE comments show that the air modelling supporting the DEIR was manually manipulated and altered in many respects to make

the modelling fundamentally inaccurate and misleading. This renders the DEIR inadequate as an informational document. A revised draft EIR is required to include accurate air modelling and analysis.

In this letter we highlight just some of the more egregious examples of "tinkering" that were performed on the air models in the DEIR.

- The energy-generating utilities for the Project were manually adjusted to show a CH4 (methane) and N2O (nitrous oxide) intensity factor of zero. Exhibit F, p. 2. Of course, this is impossible, and vastly understates the greenhouse gas (GHG) emissions of the Project.
- The DEIR's model fails to include all of the 25,000 to 45,000 square feet of construction offices, again understating Project emissions of many types, particularly volatile organic compounds (VOCs).
- The Aldea Housing Densification will include 184 parking spaces (DEIR, p. 3-28), yet the DEIR's air model assumes zero parking for these units. Exhibit F, p. 3.
- The Project involves demolition of 42 existing student housing structures in order to construct 184 new housing structures. But the DEIR calculated the demolished housing as "Research and Development," which overstates the baseline emissions. *Id*. at 4.
- The DEIR models all 3.9 million square feet of existing land use space as "hospital." However, much of that space is housing, lecture halls, commercial space, library, parking and other functions that generate lower levels of emissions. This results in an overstatement of baseline emissions. *Id*. at 5.
- The DEIR vastly undercounts the emissions from Phase I of the Project. The Initial Phase calculation assumes 412,000 square feet of only research and development and residential space. But Phase I will actually include 1.43 million square feet of new building development. Thus, the DEIR undercounts the Phase I land use space by over 1 million square feet, and fails to include any hospital or parking space and related emissions. *Id*. at 6.
- The DEIR makes massive manual manipulations to the CalEEMod default construction schedule - extending the construction schedule out dramatically. The longer construction schedule results in lower emission numbers since emissions are calculated on a maximum daily basis. For example, the architectural coating (painting) phase was increased by over 5100% from the default value of 10 days to 521 days. The building construction phase was increased by over 400% from 200 to 1043 days. The grading phase was increased by 3700% from the default value of 4 to 152 days. The site preparation phase was increased by 7500% from the default value of 2 to 152 days. *Id*. at 7. SWAPE lists many other manipulations that were made to the air model, all resulting in lower daily emission rates by spreading out construction emissions over a longer time period.
- The DEIR underestimated the total amount of demolition emission and hauling trips. *Id*. at 8.

- The DEIR calculated emission assuming the use of Tier 4 Final Construction equipment, which is the cleanest construction equipment currently available. However, the DEIR does not require Tier 4 Final Construction equipment. It only required Tier 4 Construction equipment. There are two types of Tier 4 construction equipment: Tier 4 Interim and Tier 4 Final. These are actually quite different. Tier 4 Final equipment is up to 80% cleaner than Tier 4 Interim equipment. Therefore, by assuming the use of Tier 4 Final equipment, when only Tier 4 Interim is required, the DEIR underestimates Project construction emissions by up to 5 times. *Id*. at 11. SWAPE points out the there is very little Tier 4 Final equipment available in the market, so assuming that a contractor will voluntarily use it when it is not required is unrealistic. *Id*. at 12.
- The DEIR air model was manually manipulated to reduce vehicle emissions, thereby underestimating emissions from cars and trucks. *Id*. at 13.
- The DEIR was manually manipulated to reduce emission from consumer products, such as hair sprays, deodorants, air fresheners and other products that may be used by future residents. *Id*. at 14.
- The DEIR reduced the "silt-loading factor" for road dust by more than half. The DEIR states that it is using a San Francisco-specific silt loading factor. However SWAPE determined that the EIR relied on a San Diego factor, not a San Francisco factor. *Id*. at 15.
- The DEIR underestimates operations vehicle emissions by manually adjusting the default vehicle trip rates. *Id*.
- The DEIR underestimates the Project energy use. Operational energy use values were manually reduced to ZERO kilowatt hours. The DEIR justifies this by citing to UCSF's zero net electricity goal for 2025. However, the zero electricity goal is simply a goal, it is not a requirement of commitment. 2025 is less than five years away. It is preposterous to assume that the Project will use zero electricity in just five years from now. *Id*. at 16.
- The DEIRs cancer risk assessment is inaccurate for several reasons: First, it assumes the use of Tier 4 Final construction equipment, which is not required; second, it fails to consider the cumulative impacts of the various construction projects; third, it fails to consider the health risk impacts from the entire operation, which includes 52,200 daily vehicle trips and related diesel particulate matter emissions and other pollutants.

K. Greenhouse Gas Impacts.

The Project will have significant greenhouse gas ("GHG") emissions of 61,815 metric tons of carbon dioxide equivalents per year (MT CO2/yr), which indicates a significant impact. DEIR, p. 4.7-36. To mitigate this impact, the DEIR proposes mitigation measure GHG-1c, requiring offsets for emissions above the existing inventory of 125,426 MT CO2/year. However, the Court of Appeal recently held that emission offsets alone cannot justify a finding of a less than significant impact. *Golden Door v. San Diego* (2018) 27 Cal.App.5th 892. The Golden Door court held that offset credits

may not adequately mitigate GHG emissions since they may be generated out of state or even out of country and may not represent real, verifiable and quantifiable emission reductions.

The DEIR also relies on alleged consistency with the 2017 California Air Resources Board ("CARB") Scoping Plan to determine GHG significance. However, SWAPE demonstrates that the Project does not demonstrate compliance with the 2017 Scoping Plan and appears to violate numerous provisions of the Plan. Exhibit F, pp. 21-25.

The DEIR relies on the Project's alleged compliance with Plan Bay Area 2040. CEQA Guidelines section 15064.4(b)(3) and 15183(b) allow lead agencies to consider a project's consistency with regional plans for mitigation of GHG emissions. However, Plan Bay Area 2040 is not a GHG reduction plan or a Climate Action Plan at all. It includes none of the required elements of such as plan as set forth in 15183.5(b)(1). *Id*. at 26.

L. Energy Impacts.

Lead agencies are required to analyze a project's energy impacts, and relying on existing energy-reduction requirements in buildings codes, and on the beneficial side effects of reducing greenhouse gases, to demonstrate a project's energy impacts will not be significant is not sufficient under CEQA. In *Spring Valley Lake Association v. City of Victorville* (2016) 248 Cal.App.4th 91, 103, the court determined that an EIR could not demonstrate greenhouse gas reductions from increasing Title 24 energy efficiency by 15 perfect if it could not show that the project "will, in fact, exceed Title 24 standards by 15 percent." While this case involves claimed greenhouse gas reductions, the result is applicable to the type of analysis required for energy reductions.

Here, the DEIR concludes that the Project will have less than significant energy impacts. DEIR, pp. 4.5-19, 4.5-28. This conclusion is in part based on the Project's compliance with UC's Sustainable Practices Policy provisions "that are designed to conserve and reduce energy consumption." *Id*. at 4.5-28. The DEIR states that all individual projects under the proposed CPHP would be required to comply with the UC Policy on Sustainable Practices, which requires new construction of facilities to meet a minimum standard of LEED-NC Silver and strive for LEED-NC Gold when possible and requires 20 percent better energy performance than Title 24. *See id*. However, the UC Policy on Sustainable Practices establishes goals, not requirements. *See* University of California - Policy on Sustainable Practices, p. 2. By solely relying on these goals, the DEIR's explanation fails to demonstrate how an increase in Title 24 efficiency and implementation of LEED-NC Silver or Gold will in fact reduce the Project's energy impacts. The DEIR also fails to calculate the reductions such measures would provide and whether they are sufficient to conclude the Project will in fact have a less than significant energy impact. Failure to provide such information renders the DEIR's

energy impacts analysis legally inadequate because it is not based on substantial evidence.

M. The EIR Fails to Adequately Analyze the Project's Land Use Impacts.

The DEIR concludes that the Project will result in a less than significant impact to Land Use and Planning. DEIR, pp. 4.10-9, 4.10-15. However, this ignores the fact that the Project is flatly inconsistent with a vast array of land use and general plan policies - most obviously the Project vastly exceeds applicable height limits. The DEIR justifies ignoring these policies by arguing that the University is not required to comply with local land use and zoning. Even if this were true, this does not mean that there is no impact resulting from the plan inconsistencies. CEQA is concerned with environmental impacts, not with legal requirements. The environmental impacts exist regardless of whether the University is bound to comply with the land use requirements at issue.

Also, in a 1987 Memorandum of Understanding ("MOU"), UCSF agreed to advise and consult with the City of San Francisco on any proposed construction projects. *See* Exhibit G. The MOU states that the City Planning Commission will advise UCSF about the "conformance of such development with the Master Plan of San Francisco and Planning Code Section 304.5 (Institutional Master Plans) with recommendations, of any, for amendment to the proposal… Should the City Planning commission and UCSF disagree on any matter which is the subject of this MOU, either party may request the participation of the Mayor and the Chancellor in attempting to resolve the dispute." *Id*. ¶ IV. Thus, UCSF has agreed to attempt to resolve any inconsistencies with the City's land use and zoning requirements. Also, UCSF has indicated that it intends to adhere to local policies and regulations to the extent practicable and to review policies germane to the analysis of land use impacts. DEIR, p. 4.10-6.

Where a local or regional policy of general applicability is adopted in order to avoid or mitigate environmental effects, a conflict with that policy in itself indicates a potentially significant impact on the environment. *Pocket Protectors v. Sacramento* (2005) 124 Cal.App.4th 903; *Georgetown Preservation Society v. County of El Dorado* (2018) 30 Cal.App.5th 358.

The San Francisco General Plan provides policies and objectives to guide land use decisions and, along with the San Francisco Planning Code, prescribes the permitted uses and development standards to carry out the City's policies for the 107-acre Parnassus Campus site. The DEIR must therefore include a complete and forthright analysis of the Project's consistency with the General Plan and other applicable planning documents, ordinances and regulations so that UCSF can honor its intent to adhere to the extent practicable, the City's policies and "zoning codes related to building use, height, and bulk limitations; floor areas; and parking requirements or restrictions for the purpose of ensuring compatibility with the surrounding uses." DEIR, p. 4.10-6.

Compliance with the City's adopted policies and regulations are a key indicator of whether the Project is or is not compatible with the surrounding neighborhood. Here, after discussing only some of the applicable plans, the DEIR incorrectly concludes that the Project would be compatible with the adjacent land uses and impacts would be insignificant. Urban Planner Terrell Watt lists numerous inconsistencies with the General Plan and Planning Code. *See* Exhibit B, pp. 15-21.

GENERAL PLAN/ZONGING PROVISION	INCONSISTENCY
Land Use and Urban Design Elements LU-2: Plan for growth and renovations that are substantially consistent with use limitations and bulk limitations in City planning and zoning codes that exist at the time UCSF initiates the site selection process for such growth and renovation projects…UCSF will endeavor to be consistent with applicable land use plans and mitigation approaches where consistent with UC policy, while respecting specific neighborhood plans and concerns. LU3. Ensure that future UCSF development is compatible with physical surroundings in use, scale, and density and do not negatively affect surrounding land uses. LU10. Work toward compliance with the Parnassus Heights space ceiling and adhere to boundaries for the Parnassus Heights campus site. Policy 3.5: Relate the height of buildings to important attributes of the city pattern and to the height and character of existing development. Policy 3.6: Relate the bulk of buildings to the prevailing scale of development to avoid an overwhelming or dominating appearance in new construction. San Francisco Planning Code – Use Districts City's P (Public) Zoning District Housing along Third and Fifth Avenues – see also Residential House District, Two-Family (RH-2) Code sections Height and Bulk Districts: 25-X, 40-X, 65-D, 80-D, 130-D and 220-F. Floor areas rations are determined by allowable height and coverage.	The DEIR correctly concludes that the New Hospital, as well as Millberry Union, certain West Side development and the Aldea Housing densification project would not be consistent with City Planning Code height and/or bulk regulations for their respective building sites. DEIR at 4.10-16. The DEIR continues on to incorrectly conclude despite evidence to the contrary, that these conflicts would not result in significant incompatibility with adjacent land uses or impacts on surrounding uses. Taking just the New Hospital as an example, at about 955,000 gross square feet and up to 294 feet in height, the New Hospital clearly demonstrates the Project's incompatibility with the surrounding area resulting in significant adverse environmental impacts including but not limited to, wind, visual and environmental impacts associated with an inadequate supply of housing affordable to new students, faculty and staff. The New Hospital is patently inconsistent with SF Land Use and Design policies and height and bulk requirements in multiple ways. First, the New Hospital is within three height and bulk districts and exceeds height limits for portions of the site within two of these, the 65-D and 22-F Height and Bulk districts, by over 70 feet and X stories. Second, the New Hospital would require use of a portion of the Reserve and would be located even closer to the off-site residences on Edgewood. The DEIR concedes: Impact AES-2 finds that the New Hospital would be the most noticeable visual change under the CPHP program, and would contrast sharply both in height and scale with the nearby residential development…". DEIR at 4.10-17. In justifying the conclusion that the New Hospital is compatible with adjacent land uses, the DEIR points to the proposed amendments to the 2014 LRDP which increase the space ceiling. In addition, the DEIR (Impact AES-3) finds that with implementation of appropriate design standards and exterior materials light and glare and other impacts would be reduced to less than significant. Even so, the DEIR concedes that the New Hospital will still result in significant unavoidable wind

	hazards. Analysis by Jared Ikeda provides clear evidence the New Hospital with also result in significant and unavoidable visual impacts. See Attachment 7. There are clear inconsistencies between the New Hospital and the City's General Plan policies and Code resulting in documented significant and unavoidable impacts associated with wind hazard, visual and housing, among other impacts. <u>These inconsistencies and the associated physical environmental impacts are not resolved by the amendment to the LRDP to raise the space ceiling</u>. Combined with other Project elements – Millberry Union, West Side – and the Project scale and bulk overall, the Project is clearly incompatible with the surrounding area resulting in significant and unavoidable impacts including those omitted from the DEIR but disclosed (wind) and some revealed by expert analysis (e.g., visual, cultural, housing). A revised and recirculated DEIR must re-analyze Project consistency with these and other applicable provisions of the City's Plans and Codes and Impact LU-2 must be found to be a significant and unavoidable impact. In addition, the Project is clearly inconsistent with CPHP Policy 3.6, which states that the height of buildings should be related to the prevailing scale and character of existing development. The New Hospital at nearly 100 feet taller than the tallest existing building on the campus, Moffit Hospital, is clearly inconsistent with this Policy. A revised DEIR must include in a revised Land Use and Planning section a systematic and thorough analysis of inconsistencies with all applicable (City, UC, other) policies and regulations.

Urban Design Element Policy 1.1: Recognize and protect major views in the city, with particular attention to those of open space and water. Policy 3.4: Promote building forms that will respect and improve the integrity of open spaces and other public areas.	The DEIR incorrectly concludes the project will not conflict with these policies and specifically that "[d]evelopment under the CPHP would not have a substantial adverse effect on a scenic vista" (AES-1) or "conflict with the applicable zoning and other regulations governing scenic quality" (AES-2) and therefore no mitigation is required. In his analysis of visual impacts, Jared Ikeda concludes that the New 16-story Hospital would result in significant visual impacts including specifically that it would block views to Mt Sutro and the Reserve and would block views of the ocean and Golden Gate Park from trails and other public vantage points resulting in policy inconsistencies with direct significant environmental impacts. See Attachment 7. A revised DEIR must change the disposition of these impacts (AES-1 and 2) to significant and unavoidable and identify feasible mitigation measures including alternatives to the Project.
Shadow Proposition M, adopted by the voters in 1986, added section 101.1 to the SF Planning Code and established 8 priority policies. Priority Policy No. 8 calls for the protection of parks and open space and their access to sunlight and vistas.	The DEIR incorrectly states that the implementation of the Project would not create new shadow that substantially and adversely affects the use and enjoyment of publicly accessible open spaces. In his analysis of aesthetic impacts, Jared Ikeda reviewed the DEIR's analysis with respect to shadows and reached a different conclusion documented in his letter: "It appears though that certain areas along Parnassus Avenue and Irving Street will be subject to frequent shadows throughout the year." See Attachment 7. These more frequent shadows will clearly affect the use and enjoyment of these public spaces and as such should be called out as a Significant and Unavoidable impacts of the Project as proposed. Feasible mitigation measures must be identified.

Regents' Resolution: Space Ceiling of 3.55 Million Gross Square Feet	The DEIR conveniently concludes that the impacts associated with the Project's significant increase in gross square feet (an increase of approximately 1.5 million GSF about the existing space ceiling) and population increase from 18,500 to nearly 25,000, would be less than significant because the LRDP would be amended to increase both space and population. An amendment to the space and population ceiling does not eliminate the physical environmental impacts described in the table above associated with the increased scale of the Project. Such impacts include wind hazard (found SU by the DEIR), cultural (found SU by the DEIR) and additionally, aesthetic (visual and shadows) and housing, among others. A revised DEIR must identify this as an inconsistency, re-analyze the associated environmental impacts and identify feasible mitigation including alternatives to Project components such as the New Hospital.

All of these inconsistencies are significant impacts under CEQA. A revised DEIR must include an expanded and forthright analysis of the Project's potential inconsistencies with applicable plans and policies, including the City's, and disclose the significant unavoidable environmental impacts associated with those inconsistencies. The revised DEIR must also include feasible mitigation measures and alternatives to reduce or eliminate these impacts. Alternatives should include alternative project proposals to conform to land use and zoning requirements to the maximum extent feasible, including height limitations.

N. Growth Inducing Impacts, Population and Housing Impacts.

CEQA requires the lead agency to determine whether the "environmental effects of a project will cause substantial adverse effects on human beings, either directly or indirectly," Pub. Res. Code § 21083(b)(3), (d)), and to "take immediate steps to identify any critical thresholds for the health and safety of the people of the state and take all coordinated actions necessary to prevent such thresholds being reached." *See* Pub. Res. Code § 21000 et seq. CEQA requires that an EIR include a detailed statement setting forth the growth-inducing impacts of a proposed project. *Id*. § 21100(b)(5). A proposed project is either directly or indirectly growth inducing if it: (1) **fosters economic or population growth or requires additional housing;** (2) removes obstacles to growth; (3) taxes community services or facilities to such an extent that new services or facilities would be necessary; or (4) encourages or facilitates other activities that cause significant environmental effects. CEQA Guidelines § 15126.2(d).

While growth inducing impacts of a project need not be labeled as adverse, the secondary impacts of growth (e.g., gentrification and displacement, demand for additional housing and services, traffic, air pollution, etc.) may be significant and adverse. In such cases, the secondary impacts of growth inducement must be disclosed as significant secondary or indirect impacts of the project. The analysis required is similar in many respects to the analysis required to analyze impacts associated with population and housing. CEQA Guidelines Appendix G, Section XII provides that a project will have significant impacts where it will:

> • **Induce substantial population growth or concentration of population in an area, either directly (for example, by proposing new housing or businesses), or indirectly (for example, through extension of roads or other infrastructure);**
> • Displace substantial numbers of existing housing necessitating the construction of replacement housing elsewhere; or
> • **Displace substantial numbers of people**, necessitating the construction of replacement housing elsewhere.

The City of San Francisco Department of Public Health has issued a policy paper concluding that a Housing Impact Assessment should be conducted under CEQA. San Francisco Dept. of Public Health, *The Case of Housing Impacts Assessment: The Human Health and Social Impacts of Inadequate Housing and Their Consideration in CEQA Policy and Practice* (PHES Technical Research Report) (May 2004), Exhibit H. The Housing Impact Report grounds its conclusion in CEQA's requirement that an agency must consider reasonably foreseeable "environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly." Pub. Res. Code § 210983(b)(3).

Urban Planner Terrell Watt explains that the DEIR contains a short, 3 and 1/2-page discussion of Growth Inducing Effects. Exhibit B, pp. 8-12. Ms. Watt concludes that the Project will generate demand for housing that will vastly outstrip the amount of housing that will be constructed as part of the Project. The DEIR's discussion acknowledges the Project will increase the campus population by approximately 4,100 persons by 2030 and an additional 1,080 persons by 2050, including students and faculty and staff. The DEIR also calculates the multiplier of 0.73 for an additional 3,420 jobs that could be indirectly caused or induced by the Project. The Project includes construction of 142 net new housing units/beds within the Aldea housing complex and an additional 620 new residential units for a net total of 984 new units by 2050.

The DEIR concedes "[c]ampus population growth under the proposed CPHP would not be entirely accommodated by the existing and new housing on site, and therefore would result in indirect housing demand beyond the campus site." DEIR, p. 5-5. The discussion provides little real analysis of the Project's potential to induce

growth in accordance with CEQA, nor does the discussion reach any conclusions as to the significance of growth inducing impacts instead relying on the assertion that the growth allowed by the Project is not substantial when "compared to the study area growth projections and to the extent that demand for new housing would exceed the capacity of the market area." DEIR, p. 4.12-10. Yet, the discussion does not identify any potentially significant impacts associated with population growth as a result of the elimination of the existing space ceiling and implementation of the Plan.

The DEIR goes on to state:

> "Generally, the housing demand associated with employment growth under the proposed CPHP would be satisfied by the housing that could be added in San Francisco and in other parts of the region." DEIR at 4.12-8.

Ms. Watt points out that the San Francisco and the region has been grossly underbuilding planned housing while generating significant new jobs; facts not disclosed by the DEIR. There is no information in the DEIR about the current housing crisis in San Francisco and region as summarized below. Nor does the DEIR contain any information about housing availability in the surrounding neighborhood and City, or information about housing affordability. Moreover, the DEIR fails to describe the breakdown of new students, faculty and staff in terms of numbers by typical jobs and salaries; information critical to estimating the percent of new staff, faculty and students who qualify as low income or very low income requiring lower cost housing options. Finally, the DEIR fails to acknowledge that UCSF is a major contributor to the affordable housing crisis, and will exacerbate that crisis by building out its expansion plan without building additional units affordable to new students, faculty, staff and employees of supporting services. *See* Jobs Housing Nexus Analysis SF, Kaiser Marston Associates, 2018.

Instead of the required analysis, the DEIR points to the Population and Housing Section conclusion to support its cursory overview of growth inducement impacts:

> "Implementation of the proposed CPHP would induce population growth in the Bay Area, but the population growth would **not be** substantial in comparison to growth that is projected and planned for San Francisco and the four study area counties in Plan Bay Area 2040 and the local general plans for the study area communities. Further, the population growth would not result in a demand for new housing that would exceed the capacity of the five-county market area." DEIR, p. 4.12-9. Emphasis added.

By comparing the Project's growth to the entire City and region, the DEIR seeks to diminish the significance of housing demand generated by the Project. CEQA prohibits this type of "drop in the bucket" analysis. No single project would ever have a significant impact if its effects were compared to an entire region. In *Friends of Oroville*

v. City of Oroville, 219 Cal. App. 4th 832 (2013), the Court of Appeal held that the agency failed to adequately analyze a project's cumulative contribution to significant GHG impacts by concluding, without adequate analysis, that the project's "miniscule" emissions were insignificant in light of the state's cumulative, state-wide GHG emissions, thus "applying a meaningless, relative number to determine insignificant impact." 219 Cal. App. 4th at 841-842. The Regents make the same error here by comparing the Project's impacts on housing to the entire Bay Area. In fact, given that the entire Bay Area is facing an extreme housing shortage, the cumulative impacts of this Project are worse, not better.

There is no question the Project will generate substantial additional growth in a highly constrained neighborhood, by increasing the daily average population by approximately 45%, nearly 5,200 students, faculty and staff. DEIR, p. 4.12-1. In addition, the Project generates an additional 3,420 jobs based on a multiplier of 0.73%; jobs that will put additional demand on a tight housing market. No information is provided about the nature of these jobs or the associated salary ranges of employees. The Project will also increase likely increase the demand for housing in the immediately surrounding neighborhoods and City as people avoid transit in a COVID worried world and seek to walk and or bike to work.

According to Urban Planner Ms. Watt, the Project most certainly will induce growth that will in turn significantly impact housing. Total new housing demand could be as high as 6,000+ units assuming that the majority of students, faculty, staff and indirect job employees are people who need housing. Lower demand for new housing, assuming all new students need housing and only 50% of faculty and staff need housing, at 4,000+ units, would still constitute a significant impact on a highly constrained housing market and could result in displacing local residents due to competition and gentrification. If demand is lower, due to a higher percent of new students, staff, faculty and indirect job employees are already housed (50%) the impact at 4,000+ units will still be significant due to the housing crisis because under either scenario, UCSF would be generating between 4 and 8 jobs for each new unit constructed. Added to the existing jobs-housing deficit in San Francisco and the region and the even greater deficit of housing affordable to low and very low income households, the growth induced by the Project would result in a significant impact on housing. Salaries disclosed for the Mission Bay Project for UCSF's workforce, suggest the majority of new students, staff and faculty will need housing affordable to low incomes. See www.payscale.com/research/USEmployer=UCSFMedicalCenter.

Housing Demand Range			
Direct/Multiplier Growth at 2040 DEIR page 4.12-7	Students 504	Faculty and Staff 4,680	Multiplier/Indirect Employees: 3,420
Housing Demand Estimates	High Demand (worst case scenario 100 require housing): 504 units Low Demand (50% not housed, new demand) 252 units	High Demand: (worst case scenario 80% not housed, net new): 3,744 units Low Demand (50% not housed, new demand) 2,340 units	High Demand: 50% not housed, new demand): 1,760 units

These housing-related impacts are more than glossed over by a discussion that excludes any information about the dire housing crisis.

Substantial new non-residential and residential growth in San Francisco includes total population growth based on household size assumptions, in addition to new students, staff and faculty estimated in the DEIR to be as high as 12,220 people by 2050. DEIR, p. 4.12-8. This estimate does not include indirect growth associated with the multiplier, but does assume all new growth is in San Francisco. This significant new growth will require additional public services, likely including expansion and therefore construction of facilities in the neighborhood or adjacent neighborhoods of a myriad of services. Yet the DEIR provides cursory information about these services and facilities and fails to analyze the associated impacts, including fiscal impacts. CEQA requires that if new construction of housing will occur to accommodate the Project's employees or services beyond that included in the Project, then the EIR must analyze the environmental impacts of that construction. The appropriate components for an adequate analysis include: (1) estimating the amount, location and time frame for growth that may result from the implementation of the Project (e.g., additional housing); (2) considering whether the new population would place additional demands on public services such as fire, police, recreation, emergency, health, childcare or schools; (3) applying impact assessment methodology to determine the significance of secondary or indirect impacts as a result of growth inducement; and (4) identifying mitigation measures or alternatives to address significant secondary or indirect impacts. CEQA Guidelines Appx. G § XIII(a).

The DEIR must be revised to provide this analysis and based on this analysis, to revise other environmental analyses including but not limited to population and housing, transportation, air quality, among other topics where impacts are derived in part from direct and indirect growth assumptions.

The DEIR's dismissal of likely growth inducing impacts because the impacts are "impossible to determine" violates CEQA. Virtually the sum total of the discussion, below, lacks analysis and supporting facts and evidence while at the same time identifying the potential areas of significant impacts associated with significant growth:

> "While it is acknowledged above that the precise nature, location, and magnitude of effects of indirect and induced growth cannot be determined, the proposed CPHP would likely increase overall demand in the region for housing, commercial and industrial space, and associated infrastructure. Potential effects could include increased traffic congestion; increased air pollutant emissions; loss of agricultural land and open space; loss of habitat and associated flora and fauna; increased demand on public utilities and services, such as fire and police protection, water, recycled water, wastewater, solid waste, energy, and natural gas; and increased demand for housing. An increase in housing demand in the Bay Area region would also require governmental services including, but not limited to schools, libraries, and parks to serve new commercial and residential development." DEIR, p. 5-7.

The discussion also acknowledges that this growth could contribute to a loss of open space by converting those lands to housing, commercial space and infrastructure, but attempts to discount the many impacts associated with conversion of natural and working lands by pointing out without evidence that "most jurisdictions have adopted smart-growth policies that discourage or prohibit this type of development." DEIR, p. 5-7.

Given that human beings must live somewhere, the increased demand for housing created by the Project will result in either displacement of local residents, who will in turn be forced to move elsewhere where additional housing will be required, or construction of additional housing in San Francisco. In either case, this will have significant impacts that must be analyzed in a revised EIR.

Ms. Watt concludes, "Based on accurate information about the pre-Covid SF and Bay Area housing crisis (summarize above), it can reasonably be concluded that the addition of 5,200 students, faculty and staff by 2050 and only 984 units produced, the housing need generated constitutes a significant impact. Demand for housing is further exacerbated by the job multiplier of 0.73 creating an additional 3,420 jobs induced by the Project. Total new housing demand could be as high as 6,000+ units assuming that the majority of students, faculty, staff and indirect job employees are people who need

housing. Lower demand for new housing, based on more new staff and faculty already housed, at an estimated 4,000+ units, would still constitute a significant impact. If demand is lower, due to a higher percent of new students, staff, faculty and indirect job employees are already housed (50%) the impact at 4,000+ units will still be significant due to the housing crisis. Under either scenario, UCSF would be generating between 4 and 8 jobs for each new unit constructed. Added to the existing jobs-housing deficit in San Francisco and the region and the even greater deficit of housing affordable to low and very low income households, the growth induced by the Project would result in a significant impact on housing.

A revised growth inducing analysis must be included in a revised and recirculated DEIR. The analysis must analyze the Project's likely impacts on generating housing demand and causing displacement of existing residents. The EIR must analyze feasible mitigation measures, such as the construction of additional affordable housing units to meet the additional demand generated by the Project, or contribution to a fund to facilitate construction of such new housing. Such measures are clearly feasible and therefore must be required. Since these measures will have environmental impacts of their own, this requires a recirculated draft EIR. CEQA Guidelines § 15088.5; *Mountain Lion Coalition v. Fish and Game Com*. (1989) 214 Cal.App.3d 1043.

O. The EIR Fails to Adequately Analyze the Project's Impacts on Public Services.

The DEIR concludes that the Project will result in a less than significant impact on public services. DEIR, pp. 4.13-7, 4.13-19. The DEIR makes this conclusion despite the fact that the total population at the Parnassus Heights campus will increase by nearly 7,500 by 2050. *Id*. at 4.13-7. Additionally, the DEIR limits its public services analyses to impacts on fire protection facilities and public school facilities. The DEIR states that since the increase in population at the Project site will increase over time, the Project "would result in an incremental increase in demand for fire protection." *Id*. at 4.13-8. Additionally, the DEIR only analyzed the impacts to schools based on the number of children anticipated to live in campus housing, and not the impact to school from children of students or employees not living on campus. *Id*. at 4.13-10. These analyses fail to provide substantial evidence that these impacts would be less than significant because the analyses are limited in scope and fail to include evidence supporting the conclusions. Lastly, with regards to other public facilities, with the exception to police facilities, the DEIR merely states "campus development under the proposed CPHP would not affect any other public facilities . . . and therefore, will not be evaluated further in this section." *Id*. at 4.13-6. The DEIR provides no further explanation for this omission, and the justification provided fails to support the DEIR's conclusion that the Project will have less than significant impacts on public services.

P. The EIR Fails to Adequately Analyze the Project's Transportation Impacts.

The DEIR concludes that the Project will have a less than significant transportation impact because the Project would "be consistent with the transportation-related goals and policies set forth in the *UC Sustainable Practices Policy* and the 2014 LRDP," and "would not conflict with San Francisco's Transit First Policy, Better Streets Plan, or the San Francisco Bicycle Strategy." DEIR, p. 4.15-38, 4.15-40. However, this analysis ignores the practical implications of the Project on transportation impacts. The Project will increase the campus' daily population by 5,790 by the year 2030 and by 7,850 by the year 2050. *Id*. at 4.12-7. The DEIR also anticipates an increase in public transportation use and a decrease in personal vehicle travel to the Project site, and promotes the use of the N Judah by UCSF personnel and visitors yet fails to discuss the impacts this increase in daily population will have on public transit. The N Judah is the busiest line in the Muni Metro System and adding thousands of daily users will result in a significant impact. A revised EIR is required to analyze and mitigate this impact.

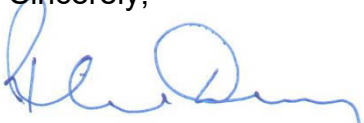
IV. UCSF SHOULD PREPARE AND RECIRCULATE A REVISED DEIR

A revised draft environmental impact report ("RDEIR") should be prepared and circulated for full public review to address the impacts identified above and to propose feasible mitigation measures. CEQA requires re-circulation of an EIR when significant new information is added to the EIR following public review but before certification. Pub. Res. Code § 21092.1. The CEQA Guidelines clarify that new information is significant if "the EIR is changed in a way that deprives the public of a meaningful opportunity to comment upon a substantial adverse environmental effect of the project" including, for example, "a disclosure showing that . . . [a] new significant environmental impact would result from the project." CEQA Guidelines § 15088.5. The above significant environmental impacts have not been analyzed in the EIR and must be addressed in an RDEIR that is re-circulated for public review.

V. CONCLUSION

For the foregoing reasons, PNC believes that the Draft EIR for the UCSF Comprehensive Parnassus Heights Plan is wholly inadequate and urges the Regents to require a Revised Draft EIR to be prepared to address the concerns raised herein. Thank you for considering our comments and please include this letter in the record of proceedings for this project.

Sincerely,



Richard Drury
LOZEAU DRURY LLP

Exhibit A

APPENDIX F: 1976 REGENTS' RESOLUTION

"DESIGNATION OF OPEN SPACE RESERVE, ALTERATION OF CAMPUS BOUNDARIES, COMMITMENT OF HOUSES TO RESIDENTIAL USE, AUTHORIZATION TO NEGOTIATE SALE OF PROPERTIES AND COMMITMENT OF TRANSPORTATION STUDIES."

The following recommendations were approved by the Board of Regents on May 21, 1976:

1. That the reserve on Mount Sutro, which was designated as open space for a twenty-five year period by The Regents in October, 1975, be increased from fifty-two to approximately fifty-eight acres, and that the designation be made permanent.

2. That the boundaries of the San Francisco campus be altered to exclude properties on the west side of Third Avenue from 1309-11 Third Avenue to and including 1379 Third Avenue, and that the new boundaries be made permanent. The total structures within the campus boundaries shall not exceed 3.55 million gross square feet (not including space committed to residential use on Third, Fourth, Fifth and Parnassus Avenues and Kirkham and Irving Streets) and this limit shall be permanent. These restrictions prohibit expansion by UCSF by purchase or condemnation or gift of any property or lease of private residential property not only contiguous with the new campus boundaries, but anywhere within the surrounding area bounded by Golden Gate Park, Oak Street, Ninth Avenue, Clayton and Clarendon. This does not prohibit the use of commercial properties or the affiliation with other public agencies within the area described.

3. That the Regents redefine their commitment, made as part of the October, 1975, approval of the Long Range Development Plan, to return certain existing houses to residential use as alternative campus space and funds for rehabilitation and relocation become available for the activities now housed therein, and that as part of this commitment: The ten houses on Third Avenue, outside the campus boundaries revised as recommended in 2. above, be sold subject to the provisions set forth in 4. below; the thirty-four houses on Third, Fifth, and Parnassus Avenues and on Irving and Kirkham Streets be rehabilitated as required and leased for residential purposes, with priority given to University students, faculty, and staff; and the seven houses on Fourth Avenue remaining after clearance of the site for the School of Dentistry Building project be retained for non-residential campus use.

4. That the Treasurer be authorized to negotiate the sale of the lots and structures, and other improvements thereon, located at 1309-11, 1319, 1325, 1337, 1343, 1355, 1361-63, 1367-69, 1373, and 1379 Third Avenue; the lot between 1355 and 1343 Third Avenue; and the lot between 1309-11 and 1319 Third Avenue, subject to the provisions listed in 4(a) through 4(e) below and that the results of said negotiations be presented to The Regents for final approval and authority to sell based on offers acceptable to The Regents:

    (a) The offer for sale of the two vacant lots shall commence within six months and the offer for sale of all remaining properties shall commence within thirty-six months, except that no relocation of University activities or tenants or conversion of houses for residential uses shall

be initiated until funds for such purpose are on hand as specified in 4(b) below and until space into which activities or tenants can be relocated is available;

(b) A special fund shall be established to fund projects within the Capital Improvement Program for the purpose of, first, providing accommodation for activities displaced by sale of houses, second, providing accommodation for campus activities displaced by conversion of the structures retained for residential use, and, third, converting and rehabilitating the structures retained for residential use, said fund to be funded from proceeds of the sale of the properties, except as noted in 4(c) below, and, if funds are not on hand from the sale of properties, from an advance, as needed, of not to exceed $50,000 from the University Opportunity Fund, such advance to be on a revolving basis and to be repaid with proceeds, as received, from subsequent sale of properties, it being understood that, at the completion of the sale of the properties, any part of the advance not repaid shall be converted to an appropriation;

(c) The portions of the proceeds of the sales of the lots between 1309-11 and 1319, and between 1343 and 1355 Third Avenue, attributable to the eighteen parking spaces currently located thereon, shall be deposited in the Net Revenue Account of the University of California Parking System;

(d) Funds not to exceed $10,000 shall be allocated by the President obtain an appraisal of market value of the properties for use as residences; and

(e) All properties shall be sold in the then existing condition, it being made clear to the buyer that he or she may be required to conform to all applicable State and City and County of San Francisco codes in converting the structures to residential use;

5. That funds not to exceed $25,000 be allocated to the San Francisco campus from the University Opportunity Fund for the purpose of retaining an independent consultant firm to develop additional plans for the alleviation of transportation problems such as traffic, parking congestion, and availability of public transit, it being the intent that such plans be implemented to the extend feasible within resources normally available to the campus for such purposes or within additional State appropriations that might be made available for such purposes;

6. That the Long Range Development Plan for the San Francisco campus, as approved by The Regents in October, 1975, be amended to reflect the described changes in designation of open space, boundaries, and use of housing;

7. That The Regents recognize the principle that the San Francisco campus will be administered so that the annual average of the daily campus population at the Parnassus site will remain substantially in accordance with the projections set forth in the Environmental Impact Report related to the Long Range Development Plan for the campus, approved by The Regents in October 1975.

Exhibit B

Terrell Watt Planning Consultants
1937 Filbert Street
San Francisco, CA 94123
terryjwatt@gmail.com
415-377-6280

September 9, 2020

Richard Drury
Lozeau Drury, LLP
410 12th Street, Suite 250
Oakland, CA 94607

RE: Comments on Draft Environmental Impact Report for Proposed UCSF Comprehensive Parnassus Heights Plan

Dear Mr. Drury,

At your request, I have reviewed the Draft Environmental Impact Report ("DEIR") for the proposed UCSF Comprehensive Parnassus Heights Plan ("Project").[1] My review focused on the DEIR's treatment of:

- Population and Housing
- Growth Inducement
- Land Use and Planning
- Alternatives

In preparing these comments, I have reviewed the following information:

1. Draft Environmental Impact Report for the Plan and Appendices
2. 2014 LARDP
3. CPHP
4. 1976 Regents' Resolution
5. January 16, 2020 Letter from Mayor London Breed to Chancellor Sam Hawgood citing the 2007 MOU and 1987 and 2007 MOU's

After carefully reviewing the DEIR for the Project I have concluded the DEIR fails in numerous respects to comply with CEQA and to fulfill CEQA's fundamental mandate. As described below, the DEIR violates this law because it fails to analyze adequately the significant environmental impacts of the Project or propose sufficient mitigation measures. Where, as here, the EIR fails

[1] See Attachment 1 for Watt Qualifications

to fully and accurately inform decision-makers and the public of the environmental consequences of proposed actions, it does not satisfy the basic goals of the statute. Because of the DEIR's numerous and serious inadequacies, the Lead Agency must revise and recirculate the document to permit an adequate understanding of the environmental issues and potential solutions, including feasible mitigation measures and alternatives.

I. Context and Introduction

A. UCSF Should Honor the Space Ceiling and Other Commitments

UCSF should honor its commitment to the space ceiling and to development compatible with surrounding uses at the Parnassus Heights campus by selecting an alternative within the existing space ceiling. The Parnassus Heights campus site, the oldest and largest of the UCSF campuses, is located in among some of the oldest neighborhoods in San Francisco, which are characterized by a mix of unique residential areas ranging from single family to multi-family housing and neighborhood serving commercial districts such as located along Irving and Judah Streets and 9th Avenue. In addition to Mount Sutro Open Space Reserve, several park and open space areas are located near the campus. This area surrounding the Parnassus Heights campus is further characterized by local serving streets plagued with traffic, parking congestion and lack of transit. Approximately 43% of the main campus (exclusive of the Aldea area) borders the Reserve, breaking the City's normal grid pattern and limiting ingress and egress routes to the main campus. The surrounding neighborhoods, like all of San Francisco, also suffer from a lack of affordable housing and available sites to build new housing. Recognizing the unique and constrained location the Parnassus Heights campus occupies, the Regents adopted a sensible "space ceiling" for the campus in its 1976 Regents Resolution, stating in pertinent part:

> "The total structures within the campus boundaries shall not exceed 3.55 million gross square feet (not including space committed to residential use on Third, Fourth, Fifth and Parnassus Avenues and Kirkham and Irving Streets) and this limit shall be permanent." See Attachment 2.

The Regent's Resolution recognized the transportation problems in the area and committed funds to develop a plan to alleviate transportation problems including traffic, parking congestion and lack of transit. Concern for the impacts of the Project on the neighborhood is an ongoing concern. In a letter to Chancellor Hawgood, dated January 16, 2020, Mayor London Breed, President of the Board of Supervisors Norman Yee and Supervisor Dean Preston note the need for a revised MOU to adopt and formalize arrangements for coordination and consideration of both our interests and inputs in the context of land use approvals, transportation needs and ongoing service provisions, noting the common challenges faced include housing supply, affordability and climate and seismic related risks. See Attachment 3. According to a June 4th Staff Report to the Planning Commission, the Planning Department and UCSF are engaged in ongoing conversations about how to structure a stakeholder process to achieve the Mayor and Supervisor's objectives, expected to culminate in an MOU.

While not part of the objectives or regulations in the UCSF 2014 LRDP, reference is made in the DEIR to the Community Planning Principles including:

- Land Use LU1. Plan for growth and renovations that are substantially consistent with use limitations and height and bulk limitations in the City planning and zoning codes that exist at the time UCSF initiates the site selection process for such growth and renovation projects. The University should consider City planning proposals that are underway. UCSF will endeavor to be consistent with applicable land use plans and mitigation approaches where consistent with UC policy, while respecting specific neighborhood plans and concerns.
- LU3. Ensure that future UCSF development is compatible with physical surroundings in use, scale, and density, and that do not negatively affect surrounding land uses.
- LU10. Work toward compliance with the Parnassus Heights space ceiling and adhere to boundaries for the Parnassus Heights Campus site.

DEIR at page 4.10-3 to 4.10-4.

Although the University is constitutionally exempt from local land use regulation whenever using properties under its control in furtherance of its "educational mission," the University has committed to substantial consistency with local policies where feasible. This dual commitment – to the space ceiling and to adherence where feasible to local policy – is one UCSF should and can honor given the very real constraints to development in the area surrounding the Parnassus Heights campus. There are feasible alternatives to the Project, including a new hospital at Mount Zion, Mission Bay or Hunters Point, that should be fully considered in a revised and recirculated DEIR before the decision is made to break the space ceiling commitment and significantly impacting the surrounding neighborhoods.

B. The DEIR Should be Revised and Recirculated to Address the Outbreak in December 2019 of COVID 19

The outbreak of COVID 19 was first reported on December 31, 2019 in Wuhan China. The Notice of Preparation (NOP) for the UCSF Parnassus Heights campus was issued January 14, 2020. As described at page 4.0-6 of the DEIR, "[n]ormally, the baseline condition is the physical condition that exists when the Notice of Preparation ("NOP") is published. The NOP for the proposed CPHP was published in January 2020, and the baseline conditions contained in this CPHP EIR are generally taken from this time period. However, the CEQA Guidelines and applicable case law recognize that the date for establishing an environmental baseline cannot always be rigid." DEIR at 4.6-6. UCSF is a health based organization, therefore fully aware early on of the implications of the Wuhan outbreak. The DEIR itself acknowledged the potential implications of COVID 19, concluding that:

> "The net effect of the pandemic on the Parnassus Heights campus site development and operations cannot be predicted at this point in time without speculation." DEIR at page 1-9.

The DEIR concedes COVID 19 has implications for the Project. For example, the objectives for the New Hospital, objectives used in part to dismiss some alternatives, include an increase in beds to provide for inpatient health care in times of severe strain such as the current pandemic. DEIR at page 6-4. The brief discussion at page 1-9 also acknowledges that UCSF will likely consider operational changes such as increases in telehealth services and telework, among others.

COVID 19 was known or should have been known at the time of the issuance of the NOP and certainly, as reflected in Section 1.7 of the DEIR, was known prior to circulation of the DEIR for public comment. COVID 19 warrants changes and updates to existing environmental setting information, critical to complete an accurate impact analysis, as well as to the Project Description (e.g., space needs changes given a likely transition as noted in the discussion to telework and telehealth). Significant questions are raised by COVID 19 that have implications to the Project and related impacts – including but not limited to an acknowledgement that UCSF is likely to increase telework, telehealth consultations and remote learning. These are but a few of the changes warranting UCSF to hit pause both to revise the DEIR and to re-engage the public and experts, right-size the Project and evaluate other alternatives that would reduce or eliminate impacts while adhering to the existing space ceiling.

II. The Project Violates the California Environmental Quality Act

A. The Project Description is In Flux

A fundamental requirement of CEQA is that an EIR contain an accurate, complete and stable project description. Without a complete and stable project description, an agency and the public cannot be assured that all the project's environmental impacts have been revealed and mitigated. Further, CEQA and the CEQA Guidelines mandate that an EIR include a description of the "physical environmental conditions . . . from both a local and a regional perspective. . . Knowledge of the regional setting is critical to the assessment of environmental impacts." CEQA Guidelines Section 15125(a) and (c). This requirement derives from the principle that without an adequate description of the project's local and regional context, the EIR – and thus the decision-makers, agencies and public who rely on the EIR – cannot accurately assess the potentially significant impacts of the proposed Project.

As discussed above, the Project is likely changing in fundamental ways due to COVID 19 – including adjustments to the Project due to a likely increase in telework and telehealth, among other adjustments:

> "UCSF will likely consider operational changes such as increases in telework and telehealth services, especially primary and secondary health care services." DEIR at 1-9.

In addition to telehealth and telework, distance learning also appears likely on the increase. The overall space needs and allocations for the Project should be revisited in light of COVID 19 and other rapidly changing conditions due to COVID. The emerging stakeholder process referenced in the June 2020 Staff Memo to the San Francisco Planning Commission provides another good reason to pause the proposed Project entitlement process and discuss an appropriately scaled Project for the Parnassus campus site.

B. The DEIR Includes Incomplete and Inadequate Baseline Information to Support the Analysis of Project Impacts

The DEIR fails to adequately describe baseline (environmental setting) conditions. Setting or environmental baseline information is as essential to adequately disclosing and analyzing project-related and cumulative impacts as a complete and consistent Project description. Without adequate and complete information about the environmental setting, it is not possible to determine whether the Project improves or makes worse existing environmental conditions or the extent of the Project-related and cumulative impacts. The Project NOP was issued January 14, 2020 after the COVID 19 pandemic was a known crisis. As such, the DEIR's baseline or existing environmental setting information must be updated to reflect conditions Pre-COVID 19 and Post emergence of COVID 19. Another option is to postpone the Project until more is known about the COVID crisis. Both pre- and post- emergence of COVID 19 information is critical if adequate analyses are to be completed for topics ranging from land use, housing and population to transportation.

Examples of baseline setting information that is missing from the DEIR includes but is not limited to the following.

1. Students, Faculty and Staff

The DEIR omits information essential to analysis of whether the Project will result in significant impacts to housing supply as well as related impacts of displacement due to increased demand for housing and gentrification. Such information includes at a minimum the general salary ranges of new students, faculty and staff. Such information was provided in the Mission Bay Hospital environmental documents and fiscal impact analysis, hereby incorporated by reference. . In addition, the DEIR should provide information about the current student, staff and faculty to inform analysis of new housing demand (e.g., where do current staff, faculty and students live? Etc.).

2. Demographics in the Surrounding Neighborhood and City

Basic demographic information must be part of the DEIR's revised baseline in order to support and inform analysis of Project impacts on housing. The DEIR includes no information about the surrounding area demographics or demographics in the City and study area, making adequate analysis of impacts impossible.

3. Affordable, Student, Workforce and Family Friendly Housing

The Project will significantly increase students, staff and faculty at the campus adding to the demand for scarce housing affordable to new students, staff and faculty in the areas surrounding the Project, the City and the region. In addition the Project will nearly double projected new job growth due to the multiplier effect. The DEIR must analyze the potential for the Project to raise housing prices, contribute to gentrification and displacement due to price increases and competition for scarce housing in the surrounding area, San Francisco and the region. Very little setting information is provided to support analysis in the short, 13 page section on Population and Housing and the even shorter, 8-page discussion of growth inducement.

To perform an adequate analysis of Project and cumulative impacts to population and housing and growth inducement, it is essential the DEIR include in the description of the Project baseline (setting) details concerning existing vacancy rates for affordable units, including deed restricted housing, family housing, and housing affordable to the workforce[2] in the surrounding neighborhoods[3], the City as well as the broader five-county study area. Little setting information is provided in support of the DEIR's across the board conclusions that impacts associated with project growth will be less than significant. The DEIR contains no information concerning affordable housing and workforce housing whatsoever.

Without current and complete information about the existing housing stock in the surrounding neighborhoods, the City and the study area, the DEIR cannot adequately analyze the Project's impact on affordable, workforce and family friendly housing and households, and the DEIR's conclusions concerning the insignificance of Project-related and cumulative impacts cannot be supported by facts and evidence. The DEIR must be revised to include this and other baseline information, including changes in housing stock and availability pre- and post- emergence of COVID 19. While long term effects of COVID 19 maybe speculative, some effects are known and should be disclosed where possible.

In addition to the above information, the DEIR must discuss and include in its revised analysis, the locations of disadvantaged communities. Such information is essential to support analysis of the extent to which the Project could further impact these DACs and exacerbate existing housing inequity. Sources of this information are readily available. See e.g., Urban Displacement Project www.urbandisplacement.org/map/sf. Project such as this one have a high potential to contribute to the gentrification and displacement of disadvantaged communities

[2] Workforce housing is housing at the lower end of market rate serving households with up to 200% of median income and often referred to as the "missing middle" or gap in affordable housing in San Francisco. Voters recently approved funding to build more housing, including for the SF workforce.

[3] Increasingly with the COVID 19 threat, workers and students choosing to avoid transit are increasingly putting pressure on nearby housing. This warrants adjustment of the DEIR's analysis of housing impacts in the surrounding neighborhoods.

due to the influx of additional students, staff and faculty who most likely will be seeking housing within walking and biking distance to the campus in a post COVID world.

4. Existing Jobs-Housing Balance and Fit within the Surrounding Neighborhood, City and Regional Study Area

The DEIR must analyze the potential for the Project to make worse the existing imbalance of jobs and housing. Little information is provided in the DEIR on jobs housing imbalance pre- or post-emergence of COVID 19. The DEIR fails to cite readily available information for San Francisco and Region concerning the growing imbalance. Specifically, San Francisco or more accurately in the SF-Oakland-Hayward census area, created only one new home per 6.8 new jobs between 2010 and 2015. Source: US Census Data. Looking just at San Francisco, it comes out to 8.2 jobs per new home during that same period, further increasing an enormous gap in the already out of balance housing to jobs ratio in the Bay Area. Not surprising rents increased by 43% over the same period due to housing scarcity and competition from new employees. Source: U.S. Census Data 2010 and 2015. This data is readily available and must be included in a revised DEIR to support a credible analysis of the Project's impacts on housing and growth.

C. Finding the right jobs-housing balance has long been an important concern for urban planners and an important policy consideration for general and area plans. More recently, attention has turned to jobs-housing fit – the extent to which housing price and rent is well matched to local job salary and quality. The DEIR are silent on the matter of jobs housing fit and fails to adequately address the issue of jobs housing balance. The DEIR should be revised to describe the existing job-housing balance and fit for the surrounding neighborhoods, the City and region. Updated baseline (environmental setting) information must include a description of changes in demand for housing in San Francisco Pre- and Post-Emergence of COVID 19. This information is not only necessary to adequately analyze environmental topics such as displacement and Project demand for new housing, but it is also essential to determining the extent to which the Project will increase commuting, traffic, transit demand, and vehicle miles traveled. Without this information, the full impacts associated with air quality and greenhouse gas emissions, among other impacts cannot be adequately analyzed and conclusions concerning the significance of Project-relation and cumulative impacts cannot be supported by facts and evidence. The DEIR must be revised to include this and other baseline information to inform revised impact analyses and conclusions. The DEIR's Analysis of, and Mitigation for, the Impacts of the Project Are Inadequate

The discussion of a project's environmental impacts is at the core of an EIR. See CEQA Guidelines Section 15126(a). As explained below, the DEIR's analysis of the Project's environmental impacts are deficient under CEQA because the DEIR fails to provide the necessary facts and analysis to support informed decisions about the Project, mitigation

measures and alternatives. An EIR must contain facts and analysis, not just bare conclusions. A conclusion regarding the significance of an environmental impact that is not based on analysis of the relevant facts fails to fulfill CEQA's information mandate.

Additionally, an EIR must identify feasible mitigation measures to mitigate significant environmental impacts. CEQA Guidelines Section 15126.4. Under CEQA, "public agencies should not approve projects as proposed if there are feasible alternatives or feasible mitigation measures available which would substantially lessen the significant environmental effects of such projects. . . ." Pub. Res. Code Section 21002.

As explained below, the DEIR fails to provide detailed, accurate information about the full breadth of the Project's potentially significant impacts with respect to growth inducement, population and housing and land use and planning. The DEIR's cumulative analysis of these impacts is also deficient. Where the DEIR fails to adequately analyze the Project-related impacts, the cumulative analysis cannot be adequate. Further, the DEIR does not identify and analyze feasible mitigation measures that would reduce or avoid such impacts.

1. The DEIR's Analysis of the Project's Growth-Inducing and Population and Housing Impacts is Flawed

The DEIR's analysis of growth inducing and population and housing impacts is flawed and conclusions reached by the DEIR that all impacts are less than significant incorrect. These topics are closely related and the two sections contain multiple cross references. Therefore, these impact topics are discussed together in this section.

CEQA requires that an EIR include a detailed statement setting forth the growth-inducing impacts of a proposed project. Pub. Res. Code Section 21100(b)(5). A proposed project is either directly or indirectly growth inducing if it: (1) fosters economic or population growth or requires additional housing; (2) removes obstacles to growth; (3) taxes community services or facilities to such an extent that new services or facilities would be necessary; or (4) encourages or facilitates other activities that cause significant environmental effects. CEQA Guidelines Section 15126.2(d). While growth inducing impacts of a project need not be labeled as adverse, the secondary impacts of growth (e.g., gentrification and displacement, demand for additional housing and services, traffic, air pollution, etc.) may be significant and adverse. In such cases, the secondary impacts of growth inducement must be disclosed as significant secondary or indirect impacts of the project. The analysis required is similar in many respects to the analysis required to analyze impacts associated with population and housing.

a. Growth Inducement Analysis is Woefully Lacking

The DEIR contains a short, 3 and 1/2-page discussion of Growth Inducing Effects. The discussion acknowledges the Project will increase the campus population by approximately 4,100 persons by 2030 and an additional 1,080 persons by 2050, including students and faculty and staff. The DEIR also calculates the multiplier of 0.73 for an additional 3,420 jobs that could

be indirectly caused or induced by the Project. The Project includes construction of 142 net new housing units/beds within the Aldea housing complex and an additional 620 new residential units for a net total of 984 new units by 2050.

The DEIR concedes "[c]ampus population growth under the proposed CPHP would not be entirely accommodated by the existing and new housing on site, and therefore would result in indirect housing demand beyond the campus site." DEIR at 5-5. The discussion provides little real analysis of the Project's potential to induce growth in accordance with CEQA, nor does the discussion reach any conclusions as to the significance of growth inducing impacts instead relying on the assertion that the growth allowed by the Project is not substantial when "compared to the study area growth projections and to the extent that demand for new housing would exceed the capacity of the market area.[4]" DEIR at page 4.12-10. Yet, the discussion does not identify any potentially significant impacts associated with population growth as a result of the elimination of the existing space ceiling and implementation of the Plan.

The DEIR goes on to state:

> "Generally, the housing demand associated with employment growth under the proposed CPHP would be satisfied by the housing that could be added in San Francisco and in other parts of the region." DEIR at 4.12-8.

San Francisco and the region has been grossly underbuilding planned housing while generating significant new jobs; facts not disclosed by the DEIR. There is no information in the DEIR about the current housing crisis in San Francisco and region as summarized below. Nor does the DEIR contain any information about housing availability in the surrounding neighborhood and City, or information about housing affordability. Moreover, the DEIR fails to describe the breakdown of new students, faculty and staff in terms of numbers by typical jobs and salaries; information critical to estimating the percent of new staff, faculty and students who qualify as low income or very low income requiring lower cost housing options. Finally, the DEIR fails to acknowledge that UCSF is a major contributor to the affordable housing crisis, and will exacerbate that crisis by building out its expansion plan without building additional units affordable to new students, faculty, staff and employees of supporting services. See Jobs Housing Nexus Analysis SF, Kaiser Marston Associates, 2018 submitted under separate cover

Instead of the required analysis, the DEIR points to the Population and Housing Section conclusion to support its cursory overview of growth inducement impacts:

> "Implementation of the proposed CPHP would induce population growth in the Bay Area, but the population growth would not be substantial in comparison to growth that is projected and planned for San Francisco and the four study area counties in Plan Bay Area 2040 and the local general plans for the study area communities. Further, the population

[4] Five county study area.

growth would not result in a demand for new housing that would exceed the capacity of the five-county market area." DEIR at 4.12-9. Emphasis added.

By comparing the Project's growth to the entire City and region, the DEIR seeks to diminish the significance of housing demand generated by the Project. There is no question the Project will generate substantial additional growth in a highly constrained neighborhood[5], by increasing the daily average population by approximately 45%, nearly 5,200 students, faculty and staff. DEIR at page 4.12-1. In addition, the Project generates an additional 3,420 jobs based on a multiplier of 0.73%; jobs that will put additional demand on a tight housing market. No information is provided about the nature of these jobs or the associated salary ranges of employees. The Project will also increase likely increase the demand for housing in the immediately surrounding neighborhoods and City as people avoid transit in a COVID worried world and seek to walk and or bike to work.

The Project most certainly will induce growth that will in turn significantly impact housing. Total new housing demand could be as high as 6,000+ units assuming that the majority of students, faculty, staff and indirect job employees are people who need housing. Lower demand for new housing, assuming all new students need housing and only 50% of faculty and staff need housing, at 4,000+ units, would still constitute a significant impact on a highly constrained housing market and could result in displacing local residents due to competition and gentrification. If demand is lower, due to a higher percent of new students, staff, faculty and indirect job employees are already housed (50%) the impact at 4,000+ units will still be significant due to the housing crisis because under either scenario, UCSF would be generating between 4 and 8 jobs for each new unit constructed. Added to the existing jobs-housing deficit in San Francisco and the region and the even greater deficit of housing affordable to low and very low income households, the growth induced by the Project would result in a significant impact on housing. Salaries disclosed for the Mission Bay Project for UCSF's workforce, suggest the majority of new students, staff and faculty will need housing affordable to low incomes. See www.payscale.com/research/USEmployer=UCSFMedicalCenter

Housing Demand Range			
Direct/Multiplier Growth at 2040 DEIR page 4.12-7	Students 504	Faculty and Staff 4,680	Multiplier/Indirect Employees: 3,420
Housing Demand Estimates	High Demand (worst case scenario 100 require housing): 504 units	High Demand: (worst case scenario 80% not housed, net new): 3,744 units	High Demand: 50% not housed, new demand):

[5] Constrained in terms of circulation and housing.

	Low Demand (50% not housed, new demand) 252 units	Low Demand (50% not housed, new demand) 2,340 units	1,760 units

These housing-related impacts are more than glossed over by a discussion that excludes any information about the dire housing crisis.

Substantial new non-residential and residential growth in San Francisco includes total population growth based on household size assumptions[6], in addition to new students, staff and faculty estimated in the DEIR to be as high as 12,220 people by 2050. DEIR at page 4.12-8. This estimate does not include indirect growth associated with the multiplier, but does assume all new growth is in San Francisco. This significant new growth will require additional public services, likely including expansion and therefore construction of facilities in the neighborhood or adjacent neighborhoods of a myriad of services. Yet the DEIR provide cursory information about these services and facilities and fails to analyze the associated impacts, including fiscal impacts. CEQA requires that if new construction of housing will occur to accommodate the Project's employees or services beyond that included in the Project, then the EIR must analyze the environmental impacts of that construction. The appropriate components for an adequate analysis include: (1) estimating the amount, location and time frame for growth that may result from the implementation of the Project (e.g., additional housing); (2) considering whether the new population would place additional demands on public services such as fire, police, recreation, emergency, health, childcare or schools; (3) applying impact assessment methodology to determine the significance of secondary or indirect impacts as a result of growth inducement; and (4) identifying mitigation measures or alternatives to address significant secondary or indirect impacts. CEQA Guidelines Appx. G Section XIII(a). The DEIR must be revised to provide this analysis and based on this analysis, to revise other environmental analyses including but not limited to population and housing, transportation, air quality, among other topics where impacts are derived in part from direct and indirect growth assumptions.

The DEIR dismissal of likely growth inducing impacts because the impacts are "impossible to determine" violates CEQA. Virtually the sum total of the discussion, below, lacks analysis and supporting facts and evidence while at the same time identifying the potential areas of significant impacts associated with significant growth:

> "While it is acknowledged above that the precise nature, location, and magnitude of effects of indirect and induced growth cannot be determined, the proposed CPHP

[6] 2.36 persons per HH; assumes only one student per HH. DEIR at page 4.12-8.

> would likely increase overall demand in the region for housing, commercial and industrial space, and associated infrastructure. Potential effects could include increased traffic congestion; increased air pollutant emissions; loss of agricultural land and open space; loss of habitat and associated flora and fauna; increased demand on public utilities and services, such as fire and police protection, water, recycled water, wastewater, solid waste, energy, and natural gas; and increased demand for housing. An increase in housing demand in the Bay Area region would also require governmental services including, but not limited to schools, libraries, and parks to serve new commercial and residential development." DEIR at 5-7.

The discussion also acknowledges that this growth could contribute to a loss of open space by converting those lands to housing, commercial space and infrastructure, but attempts to discount the many impacts associated with conversion of natural and working lands by pointing out without evidence that "most jurisdictions have adopted smart-growth policies that discourage or prohibit this type of development." DEIR at 5-7.

A revised growth inducing analysis must be included in a recirculated DEIR. The impacts of growth must also be considered in new analysis concerning the social equity impacts of the Project. See Attachment 4, Draft Planning Commission Resolution.

b. The DEIR's Analysis of and Mitigation for the Project's Population and Housing Impacts is Inadequate

The DEIR's approach to analysis of population and housing does not adequately analyze Project-related impacts associated with changes that would occur with Project implementation to the population, including employment and residential growth. Instead of actually analyzing the Project's impacts related to population and housing, the DEIR asserts that all impacts both direct and indirect will be less than significant. The DEIR lacks facts, analysis and evidence to support this conclusion. The result is a lack of information about the actual severity and extent of impacts associated with significant growth in population including students, faculty, staff and patients and visitors. For a Project that will guide development of the campus for 30+years and likely be the basis of streamlined permitting for project facilities and infrastructure, it is especially important that the DEIR comprehensively identify and analyze its impacts on growth, population, housing and employment.

In determining impact significance associated with growth in population, employment and housing, CEQA requires analysis of the following topics (substantially similar in DEIR at page 4.12-6):

- Would the project induce substantial population growth in the area, either directly (for example by proposing new homes and businesses) or indirectly (for example, through extension of roads and other infrastructure)?

- Would the project displace substantial number of existing housing units or create demand for additional housing, necessitating the construction of replacement housing?
- Would the project displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

In order to analyze the above significance thresholds, the DEIR must also address the following questions:

- Would the project result in the net loss of any existing housing units affordable to very low income or low income households through any means including gentrification?
- What is the net change in affordable versus market rate units in the surrounding neighborhoods as a result of the Project?
- Would the Project impact a disadvantaged community (DAC)?
- Would the project result in a greater imbalance between jobs and housing, including jobs housing fit?[7]

Finally, the DEIR fails to disclose the Project's inconsistency with the UCSF 2014 LRDP Community Planning Principle HI which calls for projects to make a positive contribution to San Francisco's affordable housing stock…in order to relieve housing demand in the local community. DEIR at page 4.12-4.

The DEIR's analysis of these potential impacts associated with population, employment and housing is inadequate starting with the lack of any credible environmental setting or context for the discussion including the following basic facts:

- San Francisco and the region added more jobs than housing over the last decade. Census data shows that San Francisco added 8.2 jobs per home since 2010. Overall, the Bay Area has added 2 jobs for every home built since 1990. See also Plan Bay Area Final Plan 2040, Attachment 5.
- Between 2011 and 2017, the region added 658,000 jobs and 140,000 housing units, or on average 4.7 jobs for every housing unit. SPUR Regional Strategy, Attachment 6.
- The shortfall of housing units is estimated by SPUR to be nearly 700,000 units including units to meet the needs of both middle income and lower income households. Id.

[7] Jobs-Housing fit means the extent to which housing prices or rents are matched to the local job salary ranges. Jobs-Housing balance provides a general sense of how in or out of balance housing to fit the local workforce may be. Jobs-Housing fit provides an essential and more granular sense of whether – even if in balance – local employees are able to reside locally or must commute long distances for housing affordable to them and their families. Without jobs-housing fit information, readily available using Census and other data, it is not possible for the DEIR to adequately analyze many Project-related and cumulative impacts including demand for new housing and vehicle miles traveled, among others.

- In order to meet the unmet past need plus future needs for housing, the Bay Area would need to build 45,000 units per year to produce an additional 2.2 millions units by 2070. Id.
- The production of affordable housing has lagged behind production of housing affordable to higher incomes, with significant shortfalls of housing production for moderate or middle income wage earners and lower income wage earners. From 1999 to 2014, the Bay area issued permits for only about 35% of the units to meet the needs of vulnerable populations such as low-income families. Id.
- Much of the older housing stock located in higher density areas such as San Francisco have experienced gentrification pressures due to competition from new and higher income wage earners. Id.

A revised DEIR must provide baseline information about the housing crisis and re-analyze housing-related impacts of the Project in light of that information. Based on accurate information about the pre-Covid SF and Bay Area housing crisis (summarize above), it can reasonably be concluded that the additional of 5,200 students, faculty and staff by 2050 and only 984 units produced, the housing need generated constitutes a significant impact. Demand for housing is further exacerbated by the job multiplier of 0.73 creating an additional 3,420 jobs induced by the Project. Total new housing demand could be as high as 6,000+ units assuming that the majority of students, faculty, staff and indirect job employees are people who need housing. Lower demand for new housing, based on more new staff and faculty already housed, at an estimated 4,000+ units, would still constitute a significant impact. If demand is lower, due to a higher percent of new students, staff, faculty and indirect job employees are already housed (50%) the impact at 4,000+ units will still be significant due to the housing crisis. Under either scenario, UCSF would be generating between 4 and 8 jobs for each new unit constructed. Added to the existing jobs-housing deficit in San Francisco and the region and the even greater deficit of housing affordable to low and very low income households, the growth induced by the Project would result in a significant impact on housing.

The Project is also inconsistent with the Community Planning Principle HI directed at relieving housing demand on the local community. The DEIR's conclusion that "population growth would not result in a demand for new housing that would exceed the capacity of the five-county market area," and that "CPHP's impact related to population and housing would be less than significant" is clearly incorrect.

c. A Revised DEIR Must Include Feasible Mitigation Measures and Alternatives to Address Significant Impacts to Housing

The DEIR must identify feasible mitigation measures and alternatives capable of reducing or eliminating significant impacts. The DEIR fails to do so.

In reaction to the housing crisis, SF voters passed Measure E in March 2020, limiting construction of new office building unless affordable housing goals are met. Measure E is instructive as to the kinds of mitigation measures UCSF should consider in addressing the increased imbalance of housing and jobs the Project would foster.

Feasible mitigation measures that should be included in a revised DEIR include the following:

- Increase Project housing to provide sufficient and affordable housing for new students, faculty and staff as well as a portion of induced demand (multiplier) by increasing housing proposed by the Project and decreasing new jobs.
- Provide sufficient housing in advance of the development and occupation of non-residential buildings (in line with Measure E).
- Adopt a project that adheres to the existing space ceiling thereby reducing increased staff and faculty and associated housing demand.

These and other feasible mitigation measures must be identified in a revised DEIR to address the significant population and housing impacts of the Project and cumulative development on the Project area, the City and region. A Financial Analysis should accompany the revised Plan and DEIR setting forth costs associated with housing, services and other community benefits of the Project and laying out a revised approach to funding implementation of these Project elements.

- Would the project displace substantial number of existing housing units or create demand for additional housing, necessitating the construction of replacement housing?

2. The DEIR's Analysis of Land Use and Planning Is Incomplete and Inadequate, Thereby Failing to Disclose and Mitigate Significant Impacts

The DEIR incorrectly identifies as Less Than Significant the Project's Land Use and Planning impacts. At the heart of the analysis of land use and planning impacts is the question of the Project's consistency with applicable policies and other provisions including UC's as well as the City's. Contrary to the DEIR's conclusions, the Project is incompatible with the surrounding area and conflicts with numerous policies and provisions of San Francisco's General Plan and Planning Code, as well as UC policies. Due to UC's constitutional autonomy, development and uses on property under the control of the University that are in furtherance of the University's educational purposes are not subject to local land use regulations. However, UCSF has indicated its intent to adhere to local policies and regulations to the extent practicable and to review policies germane to the analysis of land use impacts. DEIR at page 4.10-6. In the pertinent topical sections (e.g., Land Use and Planning, Noise, Aesthetics) the DEIR does describe pertinent policies and regulations, finding in each case that the Project is compatible with surrounding land uses and as such would not create any significant impacts. As described below, the analysis of land use and policy consistency is flawed and the conclusions

unsupported by evidence. Contrary to conclusions reached in the DEIR, there is evidence of policy and regulation inconsistency resulting in significant environmental impacts, only two of which – wind and cultural – are disclosed and acknowledged.

Planning and Land Use Context: The *San Francisco General Plan* provides policies and objectives to guide land use decisions and along with the San Francisco Planning Code prescribes the permitted uses and development standards to carry out the City's policies for the 107-acre Parnassus Campus site. In a 1987 Memorandum of Understanding (MOU), UCSF agree to advise and consult with the City of San Francisco on any proposed construction projects. The MOU states that the City Planning Commission will advise UCSF about the "conformance of such development with the Master Plan of San Francisco and Planning Code Section 304.5 (Institutional Master Plans) with recommendations, of any, for amendment to the proposal… Should the City Planning commission and UCSF disagree on any matter which is the subject of this MOU, either party may request the participation of the Mayor and the Chancellor in attempting to resolve the dispute." (MOU, para. IV). The DEIR must, include a complete and forthright analysis of the Project's consistency with the General Plan and other applicable planning documents, ordinances and regulations so that UCSF can honor its intent to adhere to the extent practicable, the City's policies and "zoning codes related to building use, height, and bulk limitations; floor areas; and parking requirements or restrictions for the purpose of ensuring compatibility with the surrounding uses." DEIR at page 4.10-6. Inconsistencies between the Project and the General Plan or other applicable planning documents that were enacted to protect the environment may constitute significant impacts in themselves and can also be evidence of other significant impacts that must be analyzed in the DEIR. Where elements of the Project are not part of its educational mission, and are inconsistent with the General Plan it may not be lawfully adopted or approved. Additional information is needed about the Project elements in order to describe and document how the entirety of the Project is in support of UCSF's educational mission. It is not possible to determine that without more details about how the new space will be used and occupied and for what specific purposes.

While not considered by UCSF objectives or regulations, reference is made in the UCSF 2014 LRDP, to the Community Planning Principles which were produced in collaboration with the UCSF Community Advisory Group. These Principles include the following:

- Land Use LU1. Plan for growth and renovations that are substantially consistent with use limitations and height and bulk limitations in the City planning and zoning codes that exist at the time UCSF initiates the site selection process for such growth and renovation projects. The University should consider City planning proposals that are underway. UCSF will endeavor to be consistent with applicable land use plans and mitigation approaches where consistent with UC policy, while respecting specific neighborhood plans and concerns.

- LU3. Ensure that future UCSF development is compatible with physical surroundings in use, scale, and density, and that do not negatively affect surrounding land uses.
- LU10. Work toward compliance with the Parnassus Heights space ceiling and adhere to boundaries for the Parnassus Heights Campus site.

DEIR at page 4.10-3 to 4.10-4.

The Parnassus Heights campus site, the oldest and largest of the UCSF campuses, is located in among some of the oldest neighborhoods in San Francisco, characterized by unique physical characteristics and mix of land uses including residential areas ranging from single family to multi-family housing and charming neighborhood serving commercial districts such as located along Irving and Judah Streets and 9th Avenue. In addition to Mount Sutro Open Space Reserve, several park and open space areas are located near the campus. This area is characterized by local serving streets fraught with traffic, parking congestion and lack of transit.

Compliance with the City of San Francisco's adopted policies and regulations are a key indicator of whether the Project is or is not compatible with the surrounding neighborhood. UCSF clearly understood the breaking point for compatibility in its 1976 Regents' Resolution. Recognizing the unique and constrained location the Parnassus Heights campus occupies, the Regents adopted a sensible "space ceiling" for the campus in its 1976 Regents Resolution, stating in pertinent part: "The total structures within the campus boundaries shall not exceed 3.55 million gross square feet (not including space committed to residential use on Third, Fourth, Fifth and Parnassus Avenues and Kirkham and Irving Streets) and this limit shall be permanent." See Attachment 2.

In addition, the Resolution recognizes the transportation problems in the area and commits funds to develop a plan to alleviate transportation problems including traffic, parking congestion and lack of transit.

In a letter to Chancellor Hawgood, dated January 16, 2020, Mayor London Breed, President of the Board of Supervisors Norman Yee and Supervisor Dean Preston note the need for a revised MOU to adopt and formalize arrangements for coordination and consideration of both our interests and inputs in the context of land use approvals, transportation needs and ongoing service provisions, noting the common challenges faced include housing supply, affordability and climate and seismic related risks. See Attachment 3.

In this case, after discussing only some of the applicable plans, the DEIR incorrectly concludes across the board that the Project would be compatible with adjacent lands uses and impacts would be insignificant. Some examples of the Project's glaring inconsistencies with the General Plan and Code include, but are not limited to, the following:

San Francisco General Plan and Zoning Code Excerpt	Inconsistency
Land Use and Urban Design Elements LU-2: Plan for growth and renovations that are substantially consistent with use limitations and bulk limitations in City planning and zoning codes that exist at the time UCSF initiates the site selection process for such growth and renovation projects…UCSF will endeavor to be consistent with applicable land use plans and mitigation approaches where consistent with UC policy, while respecting specific neighborhood plans and concerns. LU3. Ensure that future UCSF development is compatible with physical surroundings in use, scale, and density and do not negatively affect surrounding land uses. LU10. Work toward compliance with the Parnassus Heights space ceiling and adhere to boundaries for the Parnassus Heights campus site. Policy 3.5: Relate the height of buildings to important attributes of the city pattern and to the height and character of existing development. Policy 3.6: Relate the bulk of buildings to the prevailing scale of development to avoid an overwhelming or dominating appearance in new construction. San Francisco Planning Code – Use Districts City's P (Public) Zoning District Housing along Third and Fifth Avenues – see also Residential House District, Two-Family (RH-2) Code sections Height and Bulk Districts: 25-X, 40-X, 65-D, 80-D, 130-D and 220-F. Floor areas rations are determined by allowable height and coverage.	The DEIR correctly concludes that the New Hospital, as well as Millberry Union, certain West Side development and the Aldea Housing densification project would not be consistent with City Planning Code height and/or bulk regulations for their respective building sites. DEIR at 4.10-16. The DEIR continues on to incorrectly conclude despite evidence to the contrary, that these conflicts would not result in significant incompatibility with adjacent land uses or impacts on surrounding uses. Taking just the New Hospital as an example, at about 955,000 gross square feet and up to 294 feet in height, the New Hospital clearly demonstrates the Project's incompatibility with the surrounding area resulting in significant adverse environmental impacts including but not limited to, wind, visual and environmental impacts associated with an inadequate supply of housing affordable to new students, faculty and staff. The New Hospital is patently inconsistent with SF Land Use and Design policies and height and bulk requirements in multiple ways. First, the New Hospital is within three height and bulk districts and exceeds height limits for portions of the site within two of these, the 65-D and 22-F Height and Bulk districts, by over 70 feet and X stories. Second, the New Hospital would require use of a portion of the Reserve and would be located even closer to the off-site residences on Edgewood. The DEIR concedes: Impact AES-2 finds that the New Hospital would be the most noticeable visual change under the CPHP program, and would contrast sharply both in height and scale with the nearby residential development…". DEIR at 4.10-17. In justifying the conclusion that the New Hospital is compatible with adjacent land uses, the DEIR points to the proposed amendments to the 2014 LRDP which increase the space ceiling. In addition, the DEIR (Impact AES-3) finds that with implementation of appropriate design standards and exterior materials light and glare and other impacts would be reduced to less than significant.

	Even so, the DEIR concedes that the New Hospital will still result in significant unavoidable wind hazards. Analysis by Jared Ikeda provides clear evidence the New Hospital with also result in significant and unavoidable visual impacts. See Attachment 7. There are clear inconsistencies between the New Hospital and the City's General Plan policies and Code resulting in documented significant and unavoidable impacts associated with wind hazard, visual and housing, among other impacts. <u>These inconsistencies and the associated physical environmental impacts are not resolved by the amendment to the LRDP to raise the space ceiling.</u> Combined with other Project elements – Millberry Union, West Side – and the Project scale and bulk overall, the Project is clearly incompatible with the surrounding area resulting in significant and unavoidable impacts including those omitted from the DEIR but disclosed (wind) and some revealed by expert analysis (e.g., visual, cultural, housing). A revised and recirculated DEIR must re-analyze Project consistency with these and other applicable provisions of the City's Plans and Codes and Impact LU-2 must be found to be a significant and unavoidable impact. In addition, the Project is clearly inconsistent with CPHP Policy 3.6, which states that the height of buildings should be related to the prevailing scale and character of existing development. The New Hospital at nearly 100 feet taller than the tallest existing building on the campus, Moffit Hospital, is clearly inconsistent with this Policy. A revised DEIR must include in a revised Land Use and Planning section a systematic and thorough analysis of inconsistencies with all applicable (City, UC, other) policies and regulations.
Urban Design Element Policy 1.1: Recognize and protect major views in the city, with particular attention to those of open space and water.	The DEIR incorrectly concludes the project will not conflict with these policies and specifically that "[d]evelopment under the CPHP would not have a substantial adverse effect on a scenic vista" (AES-1) or "conflict with the applicable zoning and other

Policy 3.4: Promote building forms that will respect and improve the integrity of open spaces and other public areas.	regulations governing scenic quality" (AES-2) and therefore no mitigation is required. In his analysis of visual impacts, Jared Ikeda concludes that the New 16-story Hospital would result in significant visual impacts including specifically that it would block views to Mt Sutro and the Reserve and would block views of the ocean and Golden Gate Park from trails and other public vantage points resulting in policy inconsistencies with direct significant environmental impacts. See Attachment 7. A revised DEIR must change the disposition of these impacts (AES-1 and 2) to significant and unavoidable and identify feasible mitigation measures including alternatives to the Project.
Shadow Proposition M, adopted by the voters in 1986, added section 101.1 to the SF Planning Code and established 8 priority policies. Priority Policy No. 8 calls for the protection of parks and open space and their access to sunlight and vistas.	The DEIR incorrectly states that the implementation of the Project would not create new shadow that substantially and adversely affects the use and enjoyment of publicly accessible open spaces. In his analysis of aesthetic impacts, Jared Ikeda reviewed the DEIR's analysis with respect to shadows and reached a different conclusion documented in his letter: "It appears though that certain areas along Parnassus Avenue and Irving Street will be subject to frequent shadows throughout the year." See Attachment 7. These more frequent shadows will clearly affect the use and enjoyment of these public spaces and as such should be called out as a Significant and Unavoidable impacts of the Project as proposed. Feasible mitigation measures must be identified.
Regents' Resolution: Space Ceiling of 3.55 Million Gross Square Feet	The DEIR conveniently concludes that the impacts associated with the Project's significant increase in gross square feet (an increase of approximately 1.5 million GSF about the existing space ceiling) and population increase from 18,500 to nearly 25,000, would be less than significant because the LRDP would be amended to increase both space and population. An amendment to the space and population ceiling does not eliminate the physical environmental impacts described in the table above associated with the increased scale of the Project. Such impacts include wind hazard (found SU by the DEIR), cultural (found SU by the DEIR) and additionally,

	aesthetic (visual and shadows) and housing, among others. A revised DEIR must identify this as an inconsistency, re-analyze the associated environmental impacts and identify feasible mitigation including alternatives to Project components such as the New Hospital.

A revised DEIR must include expanded and forthright analysis of the Project's potential inconsistencies with applicable plans and policies including the City of San Francisco's, and disclose the significant and significant and unavoidable, environmental impacts associated with those inconsistencies.

In addition, a revised DEIR must include feasible mitigation measures and alternatives to reduce or eliminate the significant impacts associated with those inconsistencies. Mitigation measures including, but not limited to the following should be considered:

- Retain the space ceiling and adopt an Alternative consistent with the space ceiling and other UCSF commitments.
- Seismically upgrade the existing hospital at Parnassus in combination with a New Hospital off-site (Mission Bay, Hunters Point, see other options in Alternatives discussion below).

3. The DEIR Alternatives Analysis is Legally Deficient

Alternatives are optional ways that the Project could achieve most of the objectives while also reducing or eliminating the environmental impacts of the Project. (California Public Resources Code Section 21002). Typically, alternatives to the Project involve changes to the location, scope, design, and intensity but can also include method of construction and/or operation. Where the Project includes a mix of land use types as in the case of this Project, alternatives may also include alterations in the mix of land uses proposed in order to reduce or eliminate impacts (e.g., increase Project housing to meet demand for growth within the space ceiling).

The fundamental mandate is that "public agencies should not approve projects if there are feasible alternatives or feasible mitigation measures available which would substantially lessen the significant environmental effects of the project" (PRC Section 21002, 21081). Government agencies are required to consider alternatives to proposed actions affecting the environment. (PRC Section 21001 (g)).

The DEIR's alternatives analysis is legally deficient because it fails to describe a reasonable range of alternatives, or to the location of the Project, which would feasibly attain most of the basic objectives of the Project but would avoid or substantially lessen any of the significant effects of the Project, and evaluate the merits of the alternatives. "An EIR's discussion of alternatives must contain analysis sufficient to allow informed decision-making." (*Laurel*

Heights I, 47 Cal.3d at 404). An EIR must also include "detail sufficient to enable those who did not participate in its preparation to understand and to consider meaningfully the issues raised by the proposed project." (*Id. At 405*.)

In developing a list of alternatives for analysis, both project objectives and known or likely significant impacts of the Project must be factored in. Alternatives need not meet all of the objectives and their fundamental purpose is to reduce or eliminate Project impacts. The Project setting can also influence the range and choice of alternatives. Offsite alternatives should be considered. Offsite alternatives must be feasible (e.g., site control by Project proponent or possible for the proponent to acquire the property).

Alternatives may not be rejected merely because they are beyond an agency's authority, would require new legislation or would be too expensive. An alternative may be eliminated from further review where it fails to meet most of the basic project objectives; is infeasible; does not avoid significant environmental impacts; and implementation cannot be reasonably ascertained or is remote and speculative. (CEQA Guidelines Section 15126.6 (f)).

The DEIR's Alternatives Analysis is Legally Deficient Because it Improperly Rejects Feasible Off-Site Alternatives and Omits Others Feasible Off-Site Alternatives

Feasible alternatives to the Project that would reduce or eliminate significant Project impacts including those acknowledged by the DEIR briefly considered but dismissed include:

- No New Hospital at Parnassus Heights Campus Site/Implement Phase 2 of Medical Center at Mission Bay Campus Site
- New Hospital at Mount Zion Campus Site

Omitted from the list of feasible offsite options are:

- Seton Hall Hospital Facility, which stands empty
- New Hospital at Hunters Point, which would provide jobs in and health services to an underserved and disadvantaged community

The reasons provided in the short approximately one-page discussion dismissing the alternative of a new hospital at Mission Bay comes down to the alternatives' reported failure to meet very focused Project objectives and a purported conflict with the 2014 LRDP and CPHP. Specifically the DEIR states that the alternative would not meet some of the Project objectives (e.g., expansion of some services and other benefits from an interdisciplinary program) and would conflict with several 2014 LRDP and CPHPs objectives for Parnassus Heights campus including but not limited to adequate space to foster collaboration and to facility inter-dependence and connectivity for operational efficiency, adequate clinical and administrative support and aligned with other programs, increase in beds, and modern industry standards including seismic safety. Page 6-55 to 6-55. The discussion concedes that the alternative would reduce the significant

wind impacts, cultural and construction impacts, but that in so doing, it would likely also result in increased cross town traffic between the Parnassus and Mission Bay campus sites. Not analyzed was a combination of a smaller, new hospital at Parnassus in combination with Mission Bay; another feasible option that has the potential to address total need and allow phasing to accommodate patients and services.

Dismissal of these alternatives (New Hospital at Mission Bay and Combination of New Hospital at Mission Bay and Reduced Hospital at Parnassus) is not justified. First, the alternative would meet most of the Project objectives. If a New Hospital at Mission Bay is combined with a rebuilt smaller hospital at Parnassus, the alternative could meet the need for additional beds and services as well. The argument that this alternative would increase cross town traffic is not supported by any evidence or analysis. Finally, the conflicts with the 2014 LRDP are not persuasive since that document is being amended to break the space ceiling and this alternative would not require that significant amendment to the LRDP. In fact, the Mission Bay Hospital was justified in part by the development cap at the Parnassus Campus. These alternatives must be fully analyzed in a revised and recirculated DEIR, including additional facts and analysis to support the arguments concerning the alternatives conflicts.

The DEIR similarly dismisses the alternative of a new hospital at the Mount Zion Campus Site, stating that this alternative would result in UCSF hospitals operating at three different campus sites which would be "less than ideal and inefficient," would not help achieve the benefits realized through interdisciplinary collaboration and convergence between clinical care, research and education, land acquisition would be difficult and citing undisclosed conflicts with LRDP and CPHP objectives. The discussion concedes that the alternative would reduce the significant wind impacts, cultural and construction impacts, but that in so doing, it would likely also result in localized impacts at the Mt. Zion site and increased cross town traffic between the Parnassus and Mission Bay campus sites. This alternative also merits full analysis in a revised and recirculated DEIR because it would reduce or eliminate Project impacts and could be carried out in combination of seismic retrofits to the existing hospital at Parnassus to meet objectives and remain consistent with the space ceiling.

Alternatives may not be rejected merely because they are beyond an agency's authority, would require new legislation or would be too expensive. An alternative may be eliminated from further review where it fails to meet most of the basic project objectives; is infeasible; does not avoid significant environmental impacts; and implementation cannot be reasonably ascertained or is remote and speculative. (CEQA Guidelines Section 15126.6 (f)). Rejection of the Mission Bay and Mt. Zion sites for a new hospital, either in lieu of or in combination with a smaller hospital at Parnassus, is not supported by the evidence and analysis provided and both require full analysis in a revised and recirculated DEIR.

In addition, the revised and recirculated DEIR should also fully analyze a new hospital at Hunters Point and reuse of Seton Hall. A new hospital at Hunters point would eliminate the

significant impacts associated with the Project and provide jobs and health care to a disadvantaged and underserved community.

Since the Mission Bay alternative reduces the Project's significant impacts, while achieving almost all Project objectives, the DEIR is arbitrary and capricious for dismissing this alternative in particular from full review and in rejecting this alternative. In addition, the Mission Bay Campus was justified by the cap at Parnassus, making this alternative essential for full review. In light of the development cap at Parnassus, each of these alternatives warrants review in a revised and recirculated DEIR with priority on Mission Bay and Hunters Point.

III. The DEIR Must be Revised and Recirculated

Decision makers and the public cannot possibly assess the Project's impacts through the present DEIR which is riddled with omissions, errors and inconsistencies. Among other fundamental deficiencies, the DEIR repeatedly understates the Project's significant environmental impacts and therefore fails to formulate feasible mitigation to reduce these impacts. To resolve these issues, a revised DEIR that would necessarily include substantial new information must be prepared and recirculated.

Sincerely,

Terry Watt

Terry Watt, ACIP

ATTACHMENTS

Attachment 1: Terry Watt Qualifications

Attachment 2: 1976 Regents' Resolution

Attachment 3: Letter from Mayor and Supervisors to Chancellor Sam Hawgood, 1/16/20

Attachment 4: SF Planning Commission Resolution

Attachment 5: Excerpt Plan Bay Area 2020

Attachment 6: Excerpt SPUR Regional Strategy

Attachment 7: Aesthetic Impact Analysis, Jared Ikeda

Attachment 1

Terry Watt, AICP

Terry Watt Planning Consultants

1937 Filbert Street - San Francisco, CA 94123

terryjwatt@gmail.com Cell: 415-377-6280

Terry Watt, AICP, owns Terry Watt Planning Consultants. Ms. Watt's firm specializes in planning and implementation projects with a focus on regionally-significant land use and conservation work that advances sustainable development patterns and practices. Prior to forming her own consulting group, she was the staff planning expert with the environmental and land use law firm Shute, Mihaly & Weinberger. She is an expert in general and specific planning and zoning, open space and agricultural land conservation strategies and approaches and environmental compliance, including CEQA and NEPA. Her skills also include facilitation and negotiation, public outreach and project management. Terry is a frequent presenter at regional, national and statewide workshops and symposiums. She holds a master's degree in City and Regional Planning from the University of Southern California and a multi-disciplinary bachelor's degree in Urban Studies from Stanford University.

Terry works with a wide variety of clients throughout California including non-profit organizations, government agencies and foundations. She volunteers up to half her professional time on select projects. Recent projects and roles include:

- Project Manager and Governor's Office Liaison for San Joaquin Valley: Least Conflict Lands for Solar PV project. Project funding came from the Hewlett and Energy Foundation's, matched by environmental organizations, the California Energy Commission and other private parties. The objective of the project was to identify areas in the Valley that had very low resource values for renewable energy to serve as an incentive for development of least conflict lands rather than valuable resource lands. Watt was responsible for overall project management and day to day coordination, multi-stakeholder (150 stakeholders) and agency (57 federal, local and agency advisors) outreach and participation, facilitation of meetings, Governor's Office convening's, all project logistics and project report. Link to Collaboration Platform – Data Basin San Joaquin Valley: http://sjvp.databasin.org/
- Governor's Office Liaison and Outreach Coordinator for the State's portion of the Desert Renewable Energy Conservation Plan (DRECP). As outreach coordinator, worked closely with local governments on DRECP related consistency issues with local general plans.
- Planning Consultant to California Attorney General's Office - Environment Section focusing on climate change, CEQA and general plans. (2007- 2010). While working with the Environment Section, assisted with settlements (Stockton General Plan, Pleasanton Housing Element and CEQA litigation); identified locally based best practices for local government planning to address climate change issues; and managed government outreach and consultation on general plans and climate action plans/energy elements/sustainability planning efforts. Post 2010 continue to provide periodic consulting services to the Environment Section related to select cases.
- Strategic Advisor and Planning Consultant to the Santa Clara Valley Open Space Authority, Greenbelt

Alliance and Committee for Green Foothills for the Coyote Valley Project focused on developing a conservation and development plan for the Valley. Watt was responsible for preparing the group's early CEQA comment letter on the negative declaration for a proposed Warehouse Project and assisting with scoping comments for the EIR.

- Measure M-2 Sales Tax and Environmental Mitigation Measure. (2009-). Terry was the Co-project manager/facilitator of a 30+-member environmental coalition that through a unique partnership with the Orange County Transportation Authority (OCTA) and state and federal wildlife agencies generated nearly $500 million in funding for programmatic environmental mitigation (conservation land acquisition and stewardship) in Measure M2, Orange County Transportation Sales Tax.
- State Office of Planning and Research Special Projects (2011 – 2017). Advisor to OPR on General Plan Guidelines, Infill and Renewable Energy Templates as part of the required update of the General Plan Guidelines. Expert panelist for workshops on SB 743.
- Marin Countywide General Plan and Environmental Impact Report (2004 to 2007). Project Manager for the award-winning Marin Countywide Plan Update and its Environmental Impact Report. The General Plan was among the first to incorporate leading edge climate change, greenhouse gas emissions reduction and sustainability policies as well as monitoring, tracking and implementation measures to measure success.
- Staff to the Martis Fund, a joint project of five environmental groups and a Business Group (Highlands Group and DMB Inc.). (2008 – ongoing). The Fund was created as a result of litigation settlement. The Fund has distributed over $15 million dollars since its inception to a range of conservation (acquisition of over 5,000 acres of open space), stewardship and restoration projects and workforce housing projects (emergency rental housing support, down payment assistance and low income apartments). Funding comes from a permanent transfer fee on all real estate sales at Martis Camp. http://www.martisfund.org/PDFs/Martis-Fund-Brochure.pdf
- Tejon Ranch Land Use and Conservation Agreement. (2006 – ongoing). Project coordinator for a dialogue process between environmental groups (Natural Resources Defense Council, Sierra Club, Endangered Habitats League, Planning and Conservation League, Audubon California) and The Tejon Ranch Company that resulted in a major Land Use and Conservation Agreement for the permanent protection of 240,000+ acres (90%) of the 270,000 acre Tejon Ranch. Secretary John Laird refers to the Agreement as a "miracle" agreement. In return for permanent conservation of 240,000+ acres, environmental groups agreed not to oppose projects within the development footprints; but can comment on regional planning efforts and the projects. Terry has an ongoing role overseeing implementation of the Agreement, including early role forming and managing the Conservancy formed by the Agreement. The Agreement provided the cornerstone of the Habitat Conservation Plan for a major portion of the Ranch; the Tejon Multi-Species Habitat Conservation Plan, TUMSHP, approved in April 2013. She recently joined the Board of the Tejon Ranch Conservancy created and funded by the Agreement.
- Orange County Wildlife Corridor. Project coordinator and architect for dialogue process between environmental and conservation organizations, City of Irvine and Lennar/Five Points development team that resulted in an 8 party Agreement, related general plan amendment and full funding to build an urban wildlife corridor to the specifications of the science team (6-member team jointly selected by all groups) connecting two high value conservation areas in central Orange County (Coastal and Eastern NCCP/HCP lands). Watt provides some ongoing implementation support. Recently (2017) coordinated DEIR comments letters on two Orange County Project proposals that could adversely impact the 5 Point/Irvine Wildlife Corridor.
- Ongoing assistance and authorship of expert comments on projects with recent letters on the proposed draft Amador County General Plan on behalf of the Foothill Conservancy and the proposed Squaw Valley Resort on behalf of a coalition of environmental and labor organizations.

- Facilitator to the Bolsa Chica Land Trust for recent agreement with Landowners to purchase remaining private acres of the Bolsa Chica uplands. Currently assisting with fundraising for the property.
- Advisor to the Nature Conservancy, the American Farmland Trust, Center for Law, Energy and Environment on numerous publications concerning urban infill and conservation.

PROFESSIONAL MEMBERSHIPS AND BOARDS

- Lambda Alpha International - Golden Gate Chapter
- American Institute of Certified Planners (AICP)
- American Planning Association (APA)
- Tahoe Fund Founding Board Member
- Tejon Ranch Conservancy Board Member
- Santa Lucia Conservancy Board Member
- Founder Council of Infill Builders
- Board Member, Planning and Conservation League

AWARDS

- State and National APA Awards for Marin County General Plan
- APA Awards for South Livermore Valley Plans
- Carla Bard Award for Individual Achievement, PCL

PUBLICATIONS

Contributor to the Award Winning Textbook:

Ecosystems of California, 2016, Chapter 40:

Land Use Regulation for Resource Conservation

Attachment 2

APPENDIX F: 1976 REGENTS' RESOLUTION

"DESIGNATION OF OPEN SPACE RESERVE, ALTERATION OF CAMPUS BOUNDARIES, COMMITMENT OF HOUSES TO RESIDENTIAL USE, AUTHORIZATION TO NEGOTIATE SALE OF PROPERTIES AND COMMITMENT OF TRANSPORTATION STUDIES."

The following recommendations were approved by the Board of Regents on May 21, 1976:

1. That the reserve on Mount Sutro, which was designated as open space for a twenty-five year period by The Regents in October, 1975, be increased from fifty-two to approximately fifty-eight acres, and that the designation be made permanent.

2. That the boundaries of the San Francisco campus be altered to exclude properties on the west side of Third Avenue from 1309-11 Third Avenue to and including 1379 Third Avenue, and that the new boundaries be made permanent. The total structures within the campus boundaries shall not exceed 3.55 million gross square feet (not including space committed to residential use on Third, Fourth, Fifth and Parnassus Avenues and Kirkham and Irving Streets) and this limit shall be permanent. These restrictions prohibit expansion by UCSF by purchase or condemnation or gift of any property or lease of private residential property not only contiguous with the new campus boundaries, but anywhere within the surrounding area bounded by Golden Gate Park, Oak Street, Ninth Avenue, Clayton and Clarendon. This does not prohibit the use of commercial properties or the affiliation with other public agencies within the area described.

3. That the Regents redefine their commitment, made as part of the October, 1975, approval of the Long Range Development Plan, to return certain existing houses to residential use as alternative campus space and funds for rehabilitation and relocation become available for the activities now housed therein, and that as part of this commitment: The ten houses on Third Avenue, outside the campus boundaries revised as recommended in 2. above, be sold subject to the provisions set forth in 4. below; the thirty-four houses on Third, Fifth, and Parnassus Avenues and on Irving and Kirkham Streets be rehabilitated as required and leased for residential purposes, with priority given to University students, faculty, and staff; and the seven houses on Fourth Avenue remaining after clearance of the site for the School of Dentistry Building project be retained for non-residential campus use.

4. That the Treasurer be authorized to negotiate the sale of the lots and structures, and other improvements thereon, located at 1309-11, 1319, 1325, 1337, 1343, 1355, 1361-63, 1367-69, 1373, and 1379 Third Avenue; the lot between 1355 and 1343 Third Avenue; and the lot between 1309-11 and 1319 Third Avenue, subject to the provisions listed in 4(a) through 4(e) below and that the results of said negotiations be presented to The Regents for final approval and authority to sell based on offers acceptable to The Regents:

    (a) The offer for sale of the two vacant lots shall commence within six months and the offer for sale of all remaining properties shall commence within thirty-six months, except that no relocation of University activities or tenants or conversion of houses for residential uses shall

be initiated until funds for such purpose are on hand as specified in 4(b) below and until space into which activities or tenants can be relocated is available;

(b) A special fund shall be established to fund projects within the Capital Improvement Program for the purpose of, first, providing accommodation for activities displaced by sale of houses, second, providing accommodation for campus activities displaced by conversion of the structures retained for residential use, and, third, converting and rehabilitating the structures retained for residential use, said fund to be funded from proceeds of the sale of the properties, except as noted in 4(c) below, and, if funds are not on hand from the sale of properties, from an advance, as needed, of not to exceed $50,000 from the University Opportunity Fund, such advance to be on a revolving basis and to be repaid with proceeds, as received, from subsequent sale of properties, it being understood that, at the completion of the sale of the properties, any part of the advance not repaid shall be converted to an appropriation;

(c) The portions of the proceeds of the sales of the lots between 1309-11 and 1319, and between 1343 and 1355 Third Avenue, attributable to the eighteen parking spaces currently located thereon, shall be deposited in the Net Revenue Account of the University of California Parking System;

(d) Funds not to exceed $10,000 shall be allocated by the President obtain an appraisal of market value of the properties for use as residences; and

(e) All properties shall be sold in the then existing condition, it being made clear to the buyer that he or she may be required to conform to all applicable State and City and County of San Francisco codes in converting the structures to residential use;

5. That funds not to exceed $25,000 be allocated to the San Francisco campus from the University Opportunity Fund for the purpose of retaining an independent consultant firm to develop additional plans for the alleviation of transportation problems such as traffic, parking congestion, and availability of public transit, it being the intent that such plans be implemented to the extend feasible within resources normally available to the campus for such purposes or within additional State appropriations that might be made available for such purposes;

6. That the Long Range Development Plan for the San Francisco campus, as approved by The Regents in October, 1975, be amended to reflect the described changes in designation of open space, boundaries, and use of housing;

7. That The Regents recognize the principle that the San Francisco campus will be administered so that the annual average of the daily campus population at the Parnassus site will remain substantially in accordance with the projections set forth in the Environmental Impact Report related to the Long Range Development Plan for the campus, approved by The Regents in October 1975.

Attachment 3

OFFICE OF THE MAYOR
SAN FRANCISCO

LONDON N. BREED
MAYOR

January 16, 2020

Chancellor Sam Hawgood
University of California, San Francisco
513 Parnassus Avenue, Room 115 F, Box 0402
San Francisco, CA, 94143

Dear Chancellor Hawgood,

Happy New Year! As we begin this new year, this new decade, we look forward to continuing to work with you and the leadership of UCSF to help advance UCSF's mission of being the leading university dedicated to advancing health worldwide through preeminent biomedical research, graduate-level education in the life sciences and health professions, and excellence in patient care. We know UCSF is devoted at every level to serving the public, and the residents of San Francisco are fortunate to have your 22,500 employees serving them, as well as, to benefit from the nearly $6.5 billion you generate annually for the Bay Area economy.

Working collaboratively has been the hallmark of the City and County of San Francisco and UCSF's relationship over the years. As examples, we can proudly point to UCSF's partnership with our Department of Public Health in operating Zuckerberg General Hospital, or more recently, your assistance reviewing the methodology of the environmental testing surrounding the Shipyard at Hunter's Point. Indeed, both the City and UCSF tremendously benefit from working together.

To that end, and to further this collaborative spirit, as UCSF embarks on its rebuild and, truly, its reimaging of its Parnassus Height Campus, we propose that the City's Planning Department convene a City stakeholder process and directly engage with your planning team on the future design and uses of the campus. We are well aware of your growing needs and of the public's growing demands on your health care system and the services you provide. However, we want to ensure that as UCSF moves forward with its proposal, the input of the City's Planning Department and UCSF's surrounding neighborhoods are heard.

Moreover, as we discuss the growth at Parnassus Heights, the common challenges we both face – housing supply, affordability, transportation infrastructure, demand for more community and social services, and climate and seismic related risks – should be addressed in manners consistent with both UCSF's and the City's polices. By working with the City's Planning Department, the Mayor's office, District Supervisors, and neighborhood residents, we are confident such challenges can be met to address both of our short term and long-term needs.

1 DR. CARLTON B. GOODLETT PLACE, ROOM 200
SAN FRANCISCO, CALIFORNIA 94102-4681
TELEPHONE: (415) 554-6141

OFFICE OF THE MAYOR
SAN FRANCISCO

LONDON N. BREED
MAYOR

In 2007, the City and County of San Francisco entered into a Memorandum of Understanding with San Francisco State University, as they embarked on their own campus redesign, which adopted and formalized arrangements for the coordination and consideration of both of our interests and inputs in the context of land use approvals, transportation needs, and ongoing service provisions. This is a model of collaboration that we recommend we pursue jointly as you move forward with the Parnassus project. As a first step in this process, we would like to meet with you and your team to outline a proposal for how such an MOU could be adopted by both of us. Should you have any initial questions or comments, please do not hesitate to contact any one of us. We look forward to discussing this further.

Sincerely,

London N. Breed
Mayor, City and County of San Francisco

Norman Yee
President, San Francisco Board of Supervisors

Dean Preston
Member, San Francisco Board of Supervisors, District 5

1 DR. CARLTON B. GOODLETT PLACE, ROOM 200
SAN FRANCISCO, CALIFORNIA 94102-4681
TELEPHONE: (415) 554-6141

Attachment 4

SAN FRANCISCO
PLANNING DEPARTMENT

Executive Summary
Policy and Planning Amendment
HEARING DATE: JUNE 11, 2020

1650 Mission St.
Suite 400
San Francisco,
CA 94103-2479

Reception:
415.558.6378

Fax:
415.558.6409

Planning
Information:
415.558.6377

Project Name:	**Centering Planning on Racial and Social Equity**
Case Number:	**2016-003351CWP**
Staff Contact:	Miriam Chion, Housing and Community Equity Manager miriam.chion@sfgov.org (415) 575-9124
Reviewed by:	Rich Hillis, Planning Department Director
Recommendation:	**Adopt the Resolution**

PROPOSED POLICY AND PLANNING AMENDMENT

In the context of the recent displays of institutional and structural racism and white supremacy, and the responding popular outcries for deep and lasting transformation, the Planning Department Staff prepared a Resolution requested by the Planning Commission to consider and adopt regarding the centering of the Planning Department's work program and resource allocation on racial and social equity. The Resolution acknowledges and apologizes for the history of inequitable Planning policies resulting in racial disparities; directs the Planning Department to implement its Racial and Social Equity Action Plan; directs the Planning Department to develop proactive strategies to address structural and institutional racism in collaboration with Black and American Indian communities and Communities of Color; directs the Planning Department to amend its hiring and promotion practices to ensure the Department's staff reflects the diversity and demographics of the community at all staff levels; recommends that the Board of Supervisors condemn discriminatory government actions; and directs the Planning Department to build accountability through metrics and reporting.

Attachments:
Exhibit A: Draft Planning Commission Resolution

SAN FRANCISCO
PLANNING DEPARTMENT

1650 Mission St.
Suite 400
San Francisco,
CA 94103-2479

Reception:
415.558.6378

Fax:
415.558.6409

Planning
Information:
415.558.6377

Draft Planning Commission Resolution
Centering Planning on Racial and Social Equity
HEARING DATE: JUNE 11, 2020

Project Name:	**Racial & Social Equity Initiative**
Case Number:	2016-003351CWP
Staff Contact:	Miriam Chion, Housing and Community Equity Manager miriam.chion@sfgov.org; 415-575-9124
Reviewed by:	Rich Hillis, Director Planning Department

RESOLUTION CENTERING THE PLANNING DEPARTMENT'S WORK PROGRAM AND RESOURCE ALLOCATION ON RACIAL AND SOCIAL EQUITY; ACKNOWLEDGING AND APOLOGIZING FOR THE HISTORY OF INEQUITABLE PLANNING POLICIES THAT HAVE RESULTED IN RACIAL DISPARITIES; DIRECTING THE DEPARTMENT TO IMPLEMENT ITS RACIAL AND SOCIAL EQUITY ACTION PLAN; DIRECTING THE DEPARTMENT TO DEVELOP PROACTIVE STRATEGIES TO ADDRESS STRUCTURAL AND INSTITUTIONAL RACISM, IN COLLABORATION WITH BLACK, AMERICAN INDIAN AND COMMUNITIES OF COLOR; DIRECTING THE DEPARTMENT TO AMEND ITS HIRING AND PROMOTION PRACTICES TO ENSURE THAT THE DEPARTMENT'S STAFF REFLECTS THE DIVERSITY AND DEMOGRAPHICS OF THE COMMUNITY AT ALL STAFF LEVELS; RECOMMENDING THAT THE BOARD OF SUPERVISORS CONDEMN DISCRIMINATORY GOVERNMENT ACTIONS; AND, DIRECTING THE DEPARTMENT TO BUILD ACCOUNTABILITY THROUGH METRICS AND REPORTING.

PREAMBLE

WHEREAS, the Planning Commission has reflected on the current events of COVID-19 and its disproportionate effects on American Indian communities, Black communities, and communities of color; the murders of George Floyd, Breonna Taylor, Ahmaud Arbery, Alex Nieto, Mario Woods, Luis Góngora Pat, and countless others as a result of police brutality and misconduct; and underlying government and economic structures that create the platform for these events; and

WHEREAS, the San Francisco Human Rights Commission states that racial equity means the systematic fair treatment of people of all Races that results in equal outcomes, while recognizing the historical context and systemic harm done to specific racial groups; and,

WHEREAS, San Francisco has a long history of creating and/or enforcing laws, policies, and institutions that have promoted white supremacy and perpetuated racial inequities in the City and County of San Francisco ("the City"), much of which is difficult to document due to historical erasure. The conditions that have created such racial inequities are also compounded by the intersection of race with class, gender,

sexuality, immigration status, disability, and other social identities and experiences that result in inequitable treatment or opportunities; and,

WHEREAS, using the power of zoning and land use, the City, its Planning Department ("Department") and other government agencies and private organizations have intentionally advanced policies aligned with white supremacy to segregate, displace, dispossess and extract wealth from Black communities, the American Indian community, and other communities of color. With the acknowledgement that this list is by no means exhaustive, examples include but are not limited to the following: Our history of state-sanctioned racism began with the genocide, exploitation, and dispossession of resources of the American Indian people on whose land our state and nation were founded. The City's 1870 Cubic Air Ordinance and 1880 Laundry Ordinance targeted the Chinese population using appeals of public safety to limit where they could live and work. Starting in the 1930s, Federal policies like redlining and local practices like racial covenants explicitly blocked American Indians, Black people and people of color from loans for homeownership and maintenance, as well as access to neighborhoods with good services and jobs; these policies led to cycles of disinvestment, segregation and poverty concentration among these communities. In 1942, in response to the bombing of Pearl Harbor, San Francisco aided the federal government in the forced eviction and internment of thousands of people of Japanese ancestry. In 1945, the Department identified neighborhoods that were predominately people of color as "blighted," including the Western Addition, South of Market, Chinatown, the Mission, and Bayview/Hunter's Point, and used this designation to justify the wholesale removal of Black communities and other communities of color through eminent domain. Furthermore, in the early 2000s, people of color were more likely to receive subprime housing loans than White borrowers. These predatory lending practices led to the foreclosure crisis starting in 2008, disproportionately impacting Black, Latinx, American Indian, and low-income people; during this period, middle-income Black and Latinx households lost nearly one-half of their wealth due to foreclosure. The cumulative impacts of these and other policies have resulted in the persistent outmigration and displacement of communities of color: the American Indian community in San Francisco experienced a decline from 0.5% of the population in 2006 to 0.1% today; while the Black community in San Francisco decreased from 11% of the City's population in 1990 to 5% in 2018; and,

WHEREAS, Although the City has taken steps to undo the damage caused by past policies and practices, the racial disparities caused continue to the present day. Despite progress in addressing explicit discrimination, racial inequities continue to be deep, pervasive, and persistent in San Francisco. In the 1950s and beyond, particularly in the context of a national Civil Rights Movement, systemic racism in San Francisco became much less explicit. Moving away from overtly race-based exclusionary policies regarding land or business ownership, the City's more recent and increasingly sophisticated racism has been defined by inaction or lack of intervention with regards to racial discrimination in employment, housing, neighborhood choice (through implicit exclusionary zoning), education, health care, or the criminal justice system; and,

WHEREAS, the legacy of these discriminatory policies is that San Francisco's American Indian, Black , and people of color have historically been, and many currently are, denied equal access to essential services and means of creating wealth, including affordable housing and homeownership opportunities, high-performing public schools, adequate transportation options, safe parks and open spaces, affordable health care, access to financial capital and entrepreneurship opportunities, and stores selling healthy food, among others; and,

WHEREAS, San Francisco's American Indian, Black, and people of color have historically been, and many currently are, disproportionately exposed to more environmental stressors including air and soil pollution, illegal dumping, industrial uses and transportation impacts, and are more likely to live in housing conditions where degraded indoor air quality contributes to the prevalence of asthma, other airborne diseases, and other health disparities; and,

WHEREAS, stark disparities continue to exist for City residents along racial lines. Race predicts worse outcomes for people of color across key indicators, including education, income, health, and incarceration, among others. For example, household income for White households is close to three times that of Black families and close to double that of American Indian and Latinx households, respectively. 53% of inmates in San Francisco County Jail are Black, while they only comprise about 5% of the City's total population. In 2018, American Indian and Black San Franciscans were more than three times more likely to be unemployed than Whites (11.9% and 12.5% versus 3.6%, respectively); and unemployment rates were similarly high for Native Hawaiian / Pacific Islanders (8.8%) and Latinxs (9.4%); and,

WHEREAS, The 2019 San Francisco Community Health Needs Assessment conducted by the San Francisco Health Improvement Partnership ("SFHIP") found that racial health inequities and poverty were foundational issues affecting the health of San Franciscans, impacting life expectancy, infant and maternal health, nutrition, stress, heart disease, and more. For example, in 2015-2017 the life expectancy in San Francisco was 72.1 years for Blacks, 76 years for Pacific Islanders, 81.7 years for White people, 85.1 years for Latinxs, and 87 years for Asians. (San Francisco data on American Indians was not included; such data is often unavailable in urban areas due to low population counts, which perpetuates disparities in documentation and policies that address their community needs.) The rates of asthma and COPD hospitalizations in the Black community are more than 10 times higher than for Asians; Pacific Islanders have the second highest rates. In San Francisco, Black women are twice as likely as White women to give birth prematurely, and Black and Pacific Islander women have the highest rates of prenatal morbidity. SFHIP also found that between 2007 and 2016, Black mothers had about 4% of births in San Francisco, but experienced 50% of maternal deaths, and 15% of infant deaths. While data on health outcomes in the American Indian population in San Francisco is limited, this community also faces persistent health disparities across a number of indicators. For instance, even though the overall rate of infant mortality in California has been declining since 2005, the American Indian/Alaska Native infant mortality rate in California remains high, averaging 6-7 infant deaths per 1,000 live births between 2005 and 2012; and,

WHEREAS, the impact of the redlining that went into effect in 1937 in San Francisco can still be seen today: 87% of redlined neighborhoods in San Francisco are neighborhoods currently undergoing displacement. The 2010 Census data showed a decline in the number of children of every racial group (including American Indian, Black, Latinx, and Asian and Pacific Islander) residing in San Francisco except white and multiracial children. Between 1990 and 2014-15, as housing prices rose, neighborhoods became more segregated, with the share of Black households in San Francisco living in high-poverty neighborhoods increasing from 41% in 2000 to 65% in 2015 (compared to Asian (27%), Latinx (19%), and White (12%) households). 50% of Black households, 31% of American Indian, and 30% of Latinx households are severely burdened by housing costs (spending more than 30% of their income on housing) while 16% of White households are similarly burdened. American Indian, Black, and Latinx residents have the lowest home ownership rates, at 0.3%, 4%, 9%, respectively. Latinxs reported the highest percentage of having been

threatened with eviction (24%), with 11% of those evictions having been raised with no cause, exceeding the percentage of no-cause evictions for other racial groups. 34% of Latinxs also reported having faced unstable living conditions in the last five years, with 36% stating they would have no other housing options if they were forced to move from their current residence.

WHEREAS, racial disparities in the rates of infection and death from COVID-19 have been documented, with American Indian, Black, and people of color disproportionately impacted by the disease. As of June 3rd, 2020 COVID-19 data for San Francisco, , indicate that Black communities in San Francisco comprised 9.3% of deaths, even though they comprise 5% of the population; Latinx communities comprised 47.8% of diagnosed cases (and comprise 15.2% of the population); American Indian communities comprised 0.4% of diagnosed cases (and comprise 0.1% of the population); and Asian communities comprised 46.5% of deaths (and comprise 34.1% of the population). In the April 2020 UCSF assessment in Mission District, 90% of the Latinx people tested for COVID-19 were positive, The health and economic impacts of the pandemic are exacerbating the existing disparities; and,

WHEREAS, Black and American Indian people are overrepresented among the homeless population. The 2019 San Francisco Homeless Count and Survey found that 37% of people experiencing homelessness were Black, while they represent only 5% of San Francisco's population. Overrepresentation in the homeless population was also high for American Indians (5% compared to 0.1%) and Pacific Islanders (2% compared to 0.2%). Of all people surveyed, 61% reported not being able to afford rent and 37% reported having no income. Discrimination and lack of access to opportunities for American Indian, Black and people of color put them at a higher risk of homelessness; and,

WHEREAS, San Francisco and other cities across the nation are part of a movement to eliminate institutional racism in partnership with the Government Alliance on Race and Equity (GARE), a national network dedicated to achieving racial equity and advancing opportunities for all. The Department's ongoing participation in GARE since January 2016 has given staff the training, tools, and support to build the Department's organizational capacity to advance racial equity in its programs, policies, and services; and,

WHEREAS, the Board of Supervisors, through Resolution No. 190547 on July 11, 2019, amended the Administrative Code to create an Office of Racial Equity as a Division of the Human Rights Commission, with authority to create a citywide Racial Equity Framework, analyze the impact of Board ordinances on racial equity, and create a racial reconciliation process; require City departments to create Racial Equity Action Plans and to provide annual updates on such Plans; require City departments to designate employees as racial equity leaders, and require the Department of Human Resources to produce an annual report concerning racial equity in the City workforce; and,

WHEREAS, in the coming years the Department will amend the General Plan through adoption of updated Housing and Transportation Elements, adoption of a Preservation Element, and updates to incorporate environmental justice, racial and social equity, and climate resilience across all relevant elements. On May 28, 2020, the Department launched the first of these updates: the Housing Element 2022 Update. The Housing Element policies will be grounded on the following values: racial and social equity, minimum displacement, more housing for all in all neighborhoods, and neighborhoods resilient to climate and health crises. The Transportation Element will be the next Element to undergo an update and will center its

policies in ConnectSF's goals of equity, economic vitality, environmental sustainability, safety and livability, and accountability and engagement; and,

WHEREAS, the Planning Commission (Commission) adopted the Racial & Social Equity Action Plan, Phase I on November 21, 2019 to guide the Department and Commission actions to strengthen our internal-facing processes and practices to address disparities in the Department's internal functions to advance organizational equity, through strategies that include: ongoing training for all staff; a biannual staff survey to assess Department attitudes and progress towards racial and social equity; and an interim Racial & Social Equity Assessment Tool to apply to relevant projects, policies, and practices; and,

WHEREAS, the Planning Commission adopted a Racial & Social Equity Vision on November 21, 2019, which envisions: inclusive neighborhoods that provide all with the opportunity to lead fulfilling, meaningful, and healthy lives; a city where public life and public spaces reflect the past, present and future of San Franciscans; a city where a person's race does not determine their lives' prospects and success; an inclusive Planning Department and Commissions that represent and engage the communities we serve; a Department that proactively infuses racial and social equity in both internal operations and external Planning work; and reimagines what the Planning field is and can be – inclusive, diverse and one that centers racial and social equity both as a practice and as an indicator of success; and

WHEREAS, the Planning Commission directed the Department to develop a Racial & Social Equity Action Plan, Phase II in collaboration with the new Office of Racial Equity, other City agencies, the Mayor's Office, the Board of Supervisors, and community stakeholders, to carefully examine and address legacy racial and social inequities and disparities in the Department's programs and policies and to develop Phase II with bold and forward-thinking strategies to advance racial and social equity in San Francisco; and,

MOVED, that the Commission considered public comment and reviewed the information before them and hereby adopts this Resolution.

FINDINGS

Having reviewed the materials identified in the preamble above, and having heard all testimony and arguments, this Commission finds, concludes, and determines as follows:

The Resolution directs the Planning Department to center its work program and resource allocation on racial and social equity; acknowledges and apologizes for the history of racist, discriminatory and inequitable planning policies that have resulted in racial disparities; directs the Department to develop proactive strategies to address and redress structural and institutional racism, in collaboration with Black and American Indian communities and communities of color; directs the Department to amend its hiring and promotion practices to ensure that the Department's staff reflects the diversity and demographics of the community at all staff levels; recommends that the Board of Supervisors condemn discriminatory government actions; and directs the Department to build accountability through metrics and reporting.

General Plan Compliance. The Resolution is in conformity with the General Plan's overall principles and discussion of preserving the cultural and economic diversity of our neighborhoods, although further changes to the General Plan may be needed to implement better the Planning Department's racial and social equity policies. While the current General Plan contains some discussion of equity as indicated in the

sections listed below, current objectives and policies across Elements do not adequately address disparities that are closely associated with race as well as other vulnerable populations.

I. HOUSING ELEMENT

POLICY 5.3. Prevent housing discrimination, particularly against immigrants and households with children.

POLICY 9.3. Maintain and improve the condition of the existing supply of public housing, through programs such as HOPE SF.

II. COMMERCE AND INDUSTRY ELEMENT

OBJECTIVE 3. PROVIDE EXPANDED EMPLOYMENT OPPORTUNITIES FOR RESIDENTS, PARTICULARLY THE UNEMPLOYED AND ECONOMICALLY DISADVANTAGED.

III. RECREATION AND OPEN SPACE ELEMENT

POLICY 1.2. Prioritize renovation in highly-utilized open spaces and recreational facilities and in high needs areas.

IV. TRANSPORTATION ELEMENT

POLICY 1.7. Assure expanded mobility for the disadvantaged.

V. COMMUNITY FACILITIES ELEMENT

POLICY 3.6 Base priority for the development of neighborhood centers on relative need.

VI. COMMUNITY SAFETY ELEMENT

OBJECTIVE 4. ASSURE THE SOUND, EQUITABLE AND EXPEDIENT RECONSTRUCTION OF SAN FRANCISCO FOLLOWING A MAJOR DISASTER.

VII. ARTS ELEMENT

OBJECTIVE II-2. SUPPORT ARTS AND CULTURAL PROGRAMS WHICH ADDRESS THE NEEDS OF DIVERSE POPULATIONS.

VIII. AIR QUALITY ELEMENT

POLICY 4.3. Minimize exposure of San Francisco's population, especially children and the elderly, to air pollutants.

IX. BAYVIEW HUNTERS POINT AREA PLAN

OBJECTIVE 15. COMBINE SOCIAL REVITALIZATION WITH PHYSICAL AND ECONOMIC REVITALIZATION EFFORTS.

POLICY 15.3. Make maximum use of Indigenous community resources to increase civic pride and support physical and economic revitalization.

X. CHINATOWN AREA PLAN

OBJECTIVE 1. PRESERVE THE DISTINCTIVE URBAN CHARACTER, PHYSICAL ENVIRONMENT AND CULTURAL HERITAGE OF CHINATOWN.

XI. EAST SOMA AREA PLAN

OBJECTIVE 7.3. REINFORCE THE IMPORTANCE OF THE SOUTH OF MARKET AS THE CENTER OF FILIPINO-AMERICAN LIFE IN SAN FRANCISCO.

XII. MISSION AREA PLAN

OBJECTIVE 7.3. REINFORCE THE IMPORTANCE OF THE MISSION AS THE CENTER OF LATINO LIFE IN SAN FRANCISCO .

XIII. WESTERN SOMA AREA PLAN

OBJECTIVE 9.4 REINFORCE THE IMPORTANCE OF THE SOUTH OF MARKET AS A CENTER FOR FILIPINO-AMERICAN AND LGBTQ LIFE IN SAN FRANCISCO.

POLICY 9.4.3. Protect and support Filipino, LGBTQ and other minority or culturally significant local business, structures, property and institutions in Western SoMa.

POLICY 9.4.6. Prioritize maintenance and support funding for cultural and service facilities that support Filipino-Americans, such as the Bayanihan Center, the Filipino Education Center, and the West Bay Pilipino Multi-Services Center.

THEREFORE, BE IT RESOLVED, that the Planning Commission condemns all forms of racism, sexism, homophobia, ableism, and other forms of discrimination; and affirms that all people – which explicitly includes American Indian people, Black and people of color – have a right to be in our City and have a right to safe and affordable housing, neighborhoods free from pollution and violence, opportunities for educational advancement and wealth creation, and access to essential services such as parks, transportation, health care, and places selling healthy food, among others; and,

BE IT FURTHER RESOLVED, that the Planning Commission stands in solidarity with the civil unrest and demands for justice of our fellow San Franciscans and communities across the nation, and affirms that Black Lives Matter; and,

BE IT FURTHER RESOLVED, that the Planning Commission must carry its responsibility for guiding the development of our city, streets, and open spaces with a central planning focus on racial and social equity; and,

BE IT FURTHER RESOLVED, that the Planning Commission condemns and apologizes for government practices that have resulted in and continue to have disproportionate impacts upon American Indian people, Black people, and people of color, including racist, discriminatory, and inequitable land use planning policies, programs and government actions, such as redlining, exclusionary zoning, racial covenants, urban renewal and discriminatory enforcement of land use policies; and,

BE IT FURTHER RESOLVED, that the Planning Commission recommends that the Board of Supervisors condemn all discriminatory government practices, including law enforcement practices that have resulted in a disproportionate number of American Indian people, Black people and people of color dying at the hands of law enforcement; and,

BE IT FURTHER RESOLVED, that the Planning Commission recommends that the Board of Supervisors reallocate resources towards expanding access to open space, housing, transportation, and services for American Indian, Black, and communities of color; and that it minimize the negative impacts of budget cuts due to the COVID-19 pandemic on these communities; and,

BE IT FURTHER RESOLVED, that the Planning Commission directs all Department staff to move beyond acknowledgement of injustice and take concrete actions that are visible in the reallocation of resources and work program to (1) increase the American Indian and the Black population and provide stability to communities of color; (2) expand access to open space, housing, transportation, quality amenities and public services, and reduce exposure to environmental pollution in these communities, while ensuring that such investments do not lead to displacement or exacerbate inequities; and, (3) develop and expand participation for American Indian, Black and communities of color ; and

BE IT FURTHER RESOLVED, that the Planning Commission directs the Department to collaborate with the Office of Racial Equity (ORE) to align its work with ORE's framework to dismantle structural and institutional racism, which asserts that the City's work shall: (1) Affirmatively address racial and social inequities; (2) Assert that housing is a human right, and prioritize equitable housing development without displacement of American Indian, Black, and communities of color; (3) Develop public land strategies to meet affordable and inclusionary housing goals; (4) Support wealth-building through home ownership for American Indian, Black, and communities of color; (5) Champion housing choice by dismantling exclusionary zoning policies; (6) Promote environmental justice; and (7) Redress the consequences of government-sanctioned racial harm via meaningful City-supported, community-led processes; and,

BE IT FURTHER RESOLVED, that the Planning Commission directs Department staff to expand the implementation of Phase I of the Racial & Social Equity Action Plan, to ensure that the Department's internal practices are thoughtfully examined and amended to advance racial and social equity across all of its core functions; and

BE IT FURTHER RESOLVED, that the Planning Commission directs Department staff to devote the resources necessary for the successful completion and implementation of Phase II of the Racial & Social Equity Action Plan to ensure that its plans, policies and programs actively address and redress structural and institutional racism; and,

BE IT FURTHER RESOLVED, that the Planning Commission directs Department staff to address racial and social equity as it develops policies and programs to respond to the health, economic and housing crises resulting from the COVID-19 pandemic, prioritizing meeting the needs of Black communities, American Indian communities, and communities of color through its policies and programs to support the adaptive use and design of the public realm, community engagement and planning, protection of tenants and cultural resources, affordable housing preservation and production, streamlining and other support for small businesses, and funding for public services and infrastructure, among others; and,

BE IT FURTHER RESOLVED, that the Planning Commission directs the Department to assess, strengthen and fund its outreach and engagement strategies to ensure that American Indian, Black and communities of color have true access to representation and participation in planning processes, as well as resources for participatory capacity building; and,

BE IT FURTHER RESOLVED, that the Planning Commission directs the Department to amend the General Plan to incorporate policies that explicitly prioritize racial and social equity for American Indian communities, Black communities, and communities of color; that subsequent amendments to the General Plan utilize a racial and social equity lens; and

BE IT FURTHER RESOLVED, that the Planning Commission directs the Department to change hiring and promotion practices to correct the underrepresentation of American Indian people, Black people, and people of color across all staff levels and ensure the workforce reflects the needs of our communities; and,

BE IT FURTHER RESOLVED, that the Planning Commission directs the Department to build accountability by identifying actions it will implement to advance racial and social equity, including developing performance measures, incorporating a racial and social equity lens in budgeting decisions, and reporting to the Commission on its progress at regular intervals; and,

BE IT FURTHER RESOLVED, that the Planning Commission asserts that the responsibility for implementing these structural and institutional changes falls upon all Department staff, across all levels and functions, and that it should not fall solely or disproportionately upon the American Indian, Black, or people of color staff who are already burdened with their lived experiences of racism; and,

NOW THEREFORE BE IT RESOLVED that the Commission hereby APPROVES the proposed Resolution on June 11, 2020.

Jonas P. Ionin

Commission Secretary

AYES:

NOES:

ABSENT:

ADOPTED:

Attachment 5

The Regional Housing Crisis

No matter what, the future will bring major challenges. Overburdened infrastructure, climate change, disruptive technological innovation, and the changing regional and national economy are just some of the many issues that will call for coordinated and concerted regional action. One challenge above all, however, requires immediate attention: housing.

The Bay Area's housing affordability and neighborhood stability crisis has been decades in the making. Although the housing crisis has many components, its foundation is clear: there simply is not enough housing, whether market-rate or affordable, given the growing number of residents and jobs.

Instead of increasing housing supply to accommodate household and employment growth, for example, many local governments slowed permitting over time. Concurrently, the state and federal governments have pulled back financial support for affordable housing. Given a limited supply of both market-rate and affordable housing, combined with strong demand driven by exceptional regional economic performance, rents and home prices have risen rapidly. Today the Bay Area may have the most severe housing crisis of any of the nation's large metro areas and, at this time, there are limited policy tools to help address the problem at a regional level.

Supply, Demand and the Impacts of Income Inequality

The Bay Area's rate of housing construction first started to lag in the mid-1970s. Each subsequent decade has seen lower levels of overall housing permitting, as seen in Figure 1.2. Since 1990, other metropolitan regions with strong economies and growing populations, such as Washington, D.C., Seattle and Denver, have permitted housing units at significantly higher rates than the Bay Area. New housing construction in the Bay Area has been much more akin to slower growing, older metropolitan regions such as Philadelphia and New York.

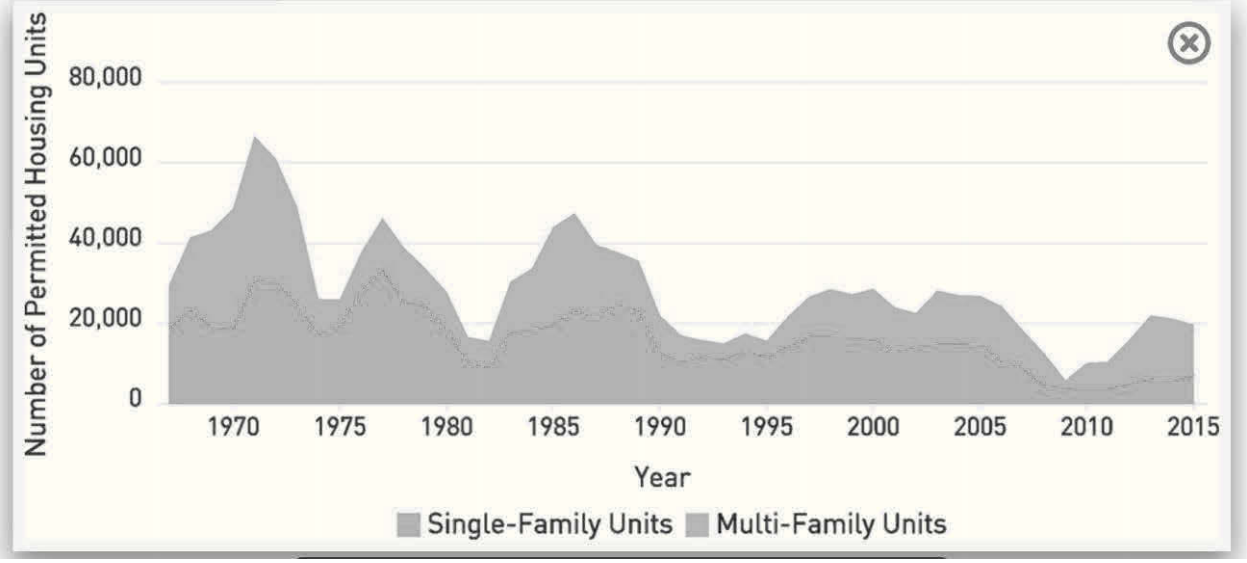


FIGURE 1.2 The historical trend for annual permitted housing units in the Bay Area. This graph shows the historical trend of permitted units for both single-family and multi-family units in the Bay Area, stretching back several decades. As can be seen, annual growth in permitted units stagnated even during the employment booms of the 1990s and 2010s.
Source: Vital Signs; Construction Industry Research Board, 1967–2010; California Homebuilding Foundation/Construction Industry Research Board, 2011–2015

There has been a particular mismatch between employment growth relative to the housing supply. Overall, the Bay Area has added nearly two jobs for every housing unit built since 1990. The deficit in housing production has been particularly severe in terms of housing affordable to lower- and middle-wage workers, especially in many of the jobs-rich, high-income communities along the Peninsula and in Silicon Valley. The booming regional economy combined with increased household formation among the millennial generation has further contributed to an evermore-acute housing crunch.

The widening income gap between high- and low-income households has further exacerbated the housing crisis. As seen in Table 1.1, the total number of households in the nine-county Bay Area increased by 20 percent from 1990 to 2015. The vast majority of this growth, however, was concentrated among households earning $150,000 or more annually, with the remaining growth among households earning less than $35,000 a year. Over a period spanning 25 years, there was a net decrease in the number of households earning between $35,000 and $149,999 in the Bay Area, as these households declined from 64 percent to 52 percent of total households in the region.

Bay Area Household Income*	1990		2015		Change from 1990 to 2015	
	Number of Households	Percent of 1990 Total**	Number of Households	Percent of 2015 Total**	Growth/ (Decline) in Households	Percent of Household Growth
Less than $35,000	446,000	20%	550,000	20%	104,000	+23%
$35,000 to $74,999	645,000	29%	625,000	23%	(20,000)	-4%
$75,000 to $149,999	785,000	35%	793,000	29%	8,000	+2%
$150,000 or more	375,000	17%	741,000	27%	366,000	+80%
Total Households	2,251,000		2,709,000		458,000	+20%

* Income shown in inflation-adjusted 2015 dollars.
** Values may not sum due to rounding.

TABLE 1.1 A comparison of the number of households by income level in the Bay Area over a 25-year period from 1990 to 2015.
From 1990 to 2015, households earning more than $150,000 a year have greatly increased their share of the total number of households in the region and comprised a vast majority of the regional growth in households over the same period. As a share of total households, those earning between $35,000 and $149,999 have declined significantly and in absolute numbers have either stagnated or decreased.
Source: U.S. Census Bureau, 1990; U.S. Census Bureau/American Community Survey, 2015 (Social Explorer)

The Regional Housing Crisis
Legacy of Leadership
A Call to Action

These dynamics have had significant implications for the Bay Area housing market. With the increased number of higher income households and most income growth going to the top 20 percent, demand for housing has remained very strong at the upper end of the market. Conversely, it has become more difficult for low- and middle-wage households to compete for market-rate housing as a larger pool of high-wage workers bid up a limited housing supply. This has further intensified competition for scarce affordable housing opportunities.

Policy Contributors to the Housing Crisis

What led to such a mismatch between housing supply and demand? Why does the Bay Area today lack so much needed housing, especially housing affordable to low- and moderate-income households? The causes of this situation are complex and there are many competing interpretations of the available evidence, including a range of economic and demographic factors that extend beyond the Bay Area itself.

Generally, however, the policy drivers — things that local, regional and state governments have the power to address or alleviate — fall into a few interrelated categories: regulatory barriers and tax policy challenges that act to restrict the production of all types of housing, especially infill development; and insufficient support for affordable housing.

The Bay Area Today
The Regional Housing Crisis
Legacy of Leadership
A Call to Action

Regulatory Barriers and Tax Policy Challenges

Although the availability of developable land in the Bay Area is limited due to topography and protected conservation lands, state and local regulations often prevent instead of promote higher-density, mixed-use development in urban infill areas. Lengthy review processes in many communities stall transit-oriented projects long enough to make them infeasible, leading to the loss of grant funding and private investment that would otherwise flow into cities along with desperately needed new housing. The California Environmental Quality Act (CEQA) often acts as another obstacle to both affordable and market-rate housing. Although CEQA has been essential for improving air quality and protecting natural habitats, the law is sometimes used as a litigation tool for blocking projects that are otherwise designed to advance California's environmental policy objectives, such as reducing greenhouse gas (GHG) emissions.

In addition, the current approach to taxation creates incentives to attract development that maximizes sales tax revenues and minimizes costs for public services (such as schools, police and social services), rather than encouraging more balanced approaches to land use. This trend — the so-called "fiscalization of land use" — has discouraged housing development and small business growth in many communities. The tax revolt measures of 40 years ago, such as Proposition 13 and other restrictions on new funding sources, caused many jurisdictions to view housing as a "fiscal loser" because property tax rates were capped below the cost of delivering services compared to retail or commercial development. Commercial property owners also often lack the motivation to develop vacant parcels since the cost of holding these properties is relatively low and a potential windfall from rising land values over time is relatively high.

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Finally, as part of the 2011 Budget Act, the California Legislature approved the dissolution of the state's 400+ redevelopment agencies. California is now one of a small number of U.S. states without tax increment financing to support urban infill development.

Reduced Support and Insufficient Progress in Building Affordable Housing

In addition to the regulatory and tax policy challenges cited above, recent years have seen major reductions in funding for affordable housing programs at both the state and federal levels. There has also been insufficient progress in the production of "naturally occurring" affordable housing — unsubsidized rental units that are affordable to low- and moderate-income households. This has severely affected the region's low- and moderate-income households by further reducing the supply of new and existing affordable housing, whether government-subsidized or market-rate, especially given median wage deflation from 2000–2013.

Since 2000, for example, there have been cuts of over 50 percent to federal affordable housing programs, and most remaining federal funds go to rehabilitation rather than increasing supply. At the state level, the aforementioned dissolution of redevelopment agencies eliminated a large source of funding for affordable housing, including a loss of more than $200 million for the Bay Area in 2011 alone, according to Enterprise Community Partners and the Non-Profit Housing Association of Northern California.

The Regional Housing Crisis

Legacy of Leadership

A Call to Action

The production of housing affordable to low- and moderate-income households has lagged behind production of housing affordable to higher-income households, with the most significant shortfall occurring in the moderate or middle income category — housing that is typically produced by the market without subsidy in most metro regions. From 1999 to 2014, the Bay Area issued permits for only about 35 percent of the units required to meet the needs of vulnerable populations such as low-income families, seniors and the homeless. This left over 100,000 needed affordable housing units unbuilt.

At the same time, much of the older housing stock that typically forms the backbone of "naturally occurring" affordable housing is located in higher density, transit rich areas that have experienced gentrification pressures and the loss of affordable units, further exacerbating the challenges of sluggish affordable housing production. Moving forward, the annual funding needed to build an adequate supply of low- and moderate-income housing through cost-restricted units rather than through market mechanisms is estimated at $1.4 billion annually, according to the Association of Bay Area Governments (ABAG).

Impacts on the Region's Present and Future

The housing crisis raises major concerns about negative impacts to the region. Affordability, a primary concern of Bay Area residents, continues to be a major challenge. This in turn poses risks to the Bay Area's socioeconomic diversity, transportation system, environmental goals and robust economy.

Housing Affordability

Housing affordability has significantly worsened over time. Home prices are at record levels in some counties and near record levels in the rest. Rent payments have almost doubled in real dollars since the 1970s. While median wages are close to the top nationally, the Bay Area has by far the highest median home sale prices of any major metro region in the country, as shown in Figure 1.3. The region is now also home to three of the five most expensive rental markets in the nation, according to Zillow.

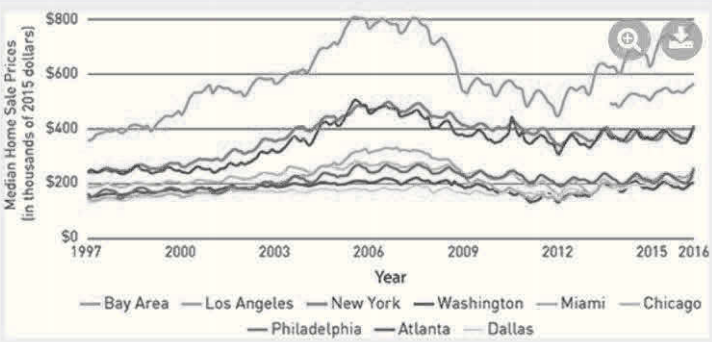


FIGURE 1.3 Median home sale prices by metro area from 1997 to 2016.
Over the last 20 years the Bay Area has seen one of the "spikiest" real estate markets in the country, with bigger booms and busts than other large metros. In particular, prices have risen much faster in the Bay Area coming out of the recent Great Recession.
Source: Vital Signs; Zillow, 1997–2016

The prospects and benefits of home ownership are simply out of reach for many Bay Area households. Amid the affluence and new wealth generated in the post-recession era, approximately 24 percent of the Bay Area's population lives below 200 percent of the federal poverty level, and the vast majority of households with annual incomes below $50,000 experience an excessive housing cost burden, as shown in Figure 1.4.

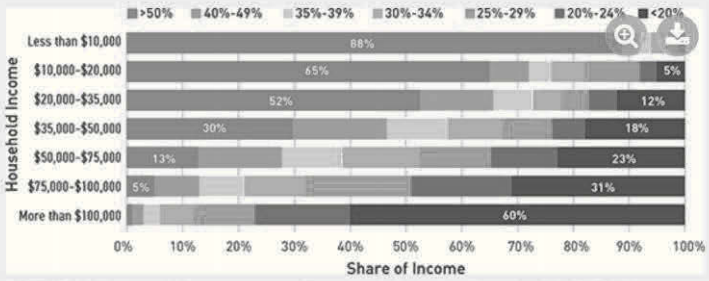


FIGURE 1.4 Share of income spent on housing by Bay Area households in 2015, segmented by income level.
A significant majority of households earning less than $35,000 in the Bay Area spent more than 50 percent of their household income on housing in 2015.
Source: Vital Signs; U.S. Census Bureau/American Community Survey, 2015

Displacement and Quality of Life Concerns

While the cost of housing has increased significantly for both owner and renter households, renters are also at higher risk for displacement during periods of growth and expansion. Currently there are hundreds of thousands of lower-income households at risk of displacement in the Bay Area, with the majority of them living in San Francisco, Santa Clara and Alameda counties.

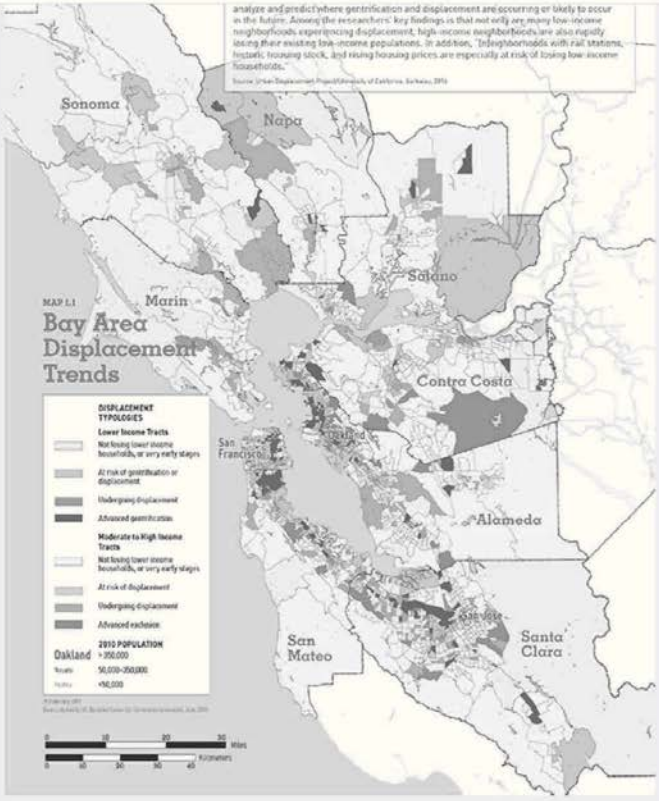
The lack of adequate tenant protections — or availability of subsidized or "naturally affordable" market-rate units in neighborhoods with quality transit service and other amenities — has accelerated the displacement of lower-income residents and even many businesses from the region's core urban areas. As shown in Map 1.1, displacement is no longer just a San Francisco problem, but a region-wide challenge.

The Bay Area Today

The Regional Housing Crisis

Legacy of Leadership

A Call to Action



MAP 1.1 Bay Area displacement trends.
Scholars at UC Berkeley looked at regional housing, income and other demographic data to analyze and predict where gentrification and displacement are occurring or likely to occur in the future. Among the researchers' key findings is that not only are many low-income neighborhoods experiencing displacement, high-income neighborhoods are also rapidly losing their existing low-income populations. In addition, "[n]eighborhoods with rail stations, historic housing stock, and rising housing prices are especially at risk of losing low-income households."
Source: Urban Displacement Project/University of California, Berkeley, 2016

Given insufficient support for affordable housing, many individuals who perform important but lower- paying jobs face either substandard or overcrowded and unhealthy housing; costly, long-distance work commutes; or sometimes even homelessness — the most severe expression of the region's housing shortage. Rising prices in the region's core have driven many lower-income households to outlying jurisdictions farther away from jobs, transit and amenities, even as low- and middle-wage job growth has been concentrated in three counties: San Francisco, San Mateo and Santa Clara. This shift contributes to increased development pressures on open space and agricultural lands, more pollution from passenger vehicles, adverse health impacts, higher transportation costs, and greater levels of highway and transit congestion.

Attachment 6

Appendix O-SM

SPUR REGIONAL STRATEGY

BRIEFING PAPER
MARCH 2020

What It Will Really Take to Create an Affordable Bay Area

How much housing does the region need to build to prevent income inequality from getting worse?

This report is one in a series of publications that lay the groundwork for the SPUR Regional Strategy.

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Sarah Karlinsky, Senior Advisor

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Contents

Introduction

The San Francisco Bay Area continues to be one of the country's least affordable housing markets. The region's lack of housing and limited affordability have significant ramifications for the people who currently live here, the people who once lived here but have been forced to move elsewhere and the people who used to be housed but now live on the street.[1] These housing pressures are remaking the region's diversity,[2] culture, economy and environment. Limited housing affordability and its impacts across California have dominated the state legislative conversation, resulting in groundbreaking state legislation that has the potential, for the first time in decades, to move the needle on addressing the housing crisis.

And yet much more needs to be done if the Bay Area is going to become a region that builds enough housing for all of the people who want to live here — and for the children of those people to be able to stay here when they grow up.

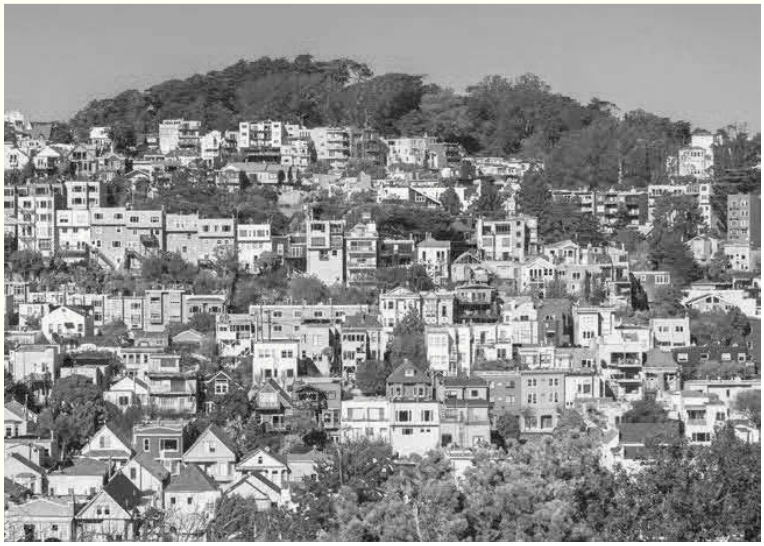
SPUR is developing a Regional Strategy to envision what the Bay Area could be like 50 years from now if the region is successful in addressing the housing crisis, making great places that support a high quality of life, creating a transit system that works and combating climate change so that future generations can continue to comfortably inhabit this planet.

As part of this effort, we are delving into the causes, nature and sheer size of the housing crisis to make sure the solutions we propose are far-reaching enough to address the scale of the problem. We are testing our proposed solutions for "enough-ness" so that the region's policies don't just continue tinkering around the edges but, when taken together, actually solve the problem. It won't be easy to do. But it is SPUR's hope that by laying out the challenge in all of its complexity, we can help local, regional and state government adopt solutions that will ultimately have a chance of working.

1 Homelessness in San Francisco has risen 30% from 2017. Applied Survey Research, *San Francisco Homeless Count and Survey Comprehensive Report*, 2019, http://hsh.sfgov.org/wp-content/uploads/FINAL-PIT-Report-2019-San-Francisco.pdf

2 The University of California at Berkeley's Urban Displacement Project and the California Housing Partnership, *Rising Housing Costs and Resegregation in the San Francisco Bay Area,* 2019, https://www.urbandisplacement.org/sites/default/files/images/bay_area_re-segregation_rising_housing_costs_report_2019.pdf

Photos by Sergio Ruiz.



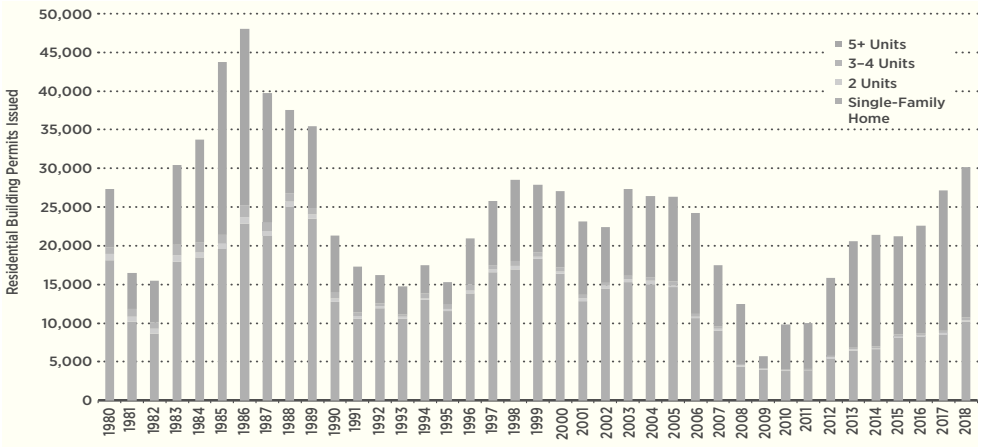
What caused the housing crisis?

Two interrelated factors drive the housing crisis: a failure to build enough housing for all of the people who live and work here, and increases in both incomes and the number of people with higher incomes. SPUR has been working with The Concord Group, a real estate economics firm, to understand both trends.

Driver 1:
The Bay Area has not built enough housing.

Although demand for housing has increased dramatically over the years — most notably due to a rapidly expanding regional economy — the amount of housing produced in the nine-county Bay Area has decreased in recent decades. Through the 1980s, the region produced a significant amount of housing on an annual basis, though much of it was built in lower-density development patterns, including single-family housing, master planned communities and garden-style apartments. In recent years, housing has increasingly been concentrated in fewer locations at higher densities,[3] and the number of units produced annually has decreased. This trend has multiple causes. The region has done a better job of protecting open space and seeking to concentrate growth in places that have already experienced development. Meanwhile, local governments have added more requirements to the development process, making it harder and harder to build housing in already-developed areas. More recently, real estate investors concerned by the Great Recession (and the subprime lending that exacerbated it) moved capital toward less risky investments in high-end urban development.

FIGURE 1
Residential Building Permits Issued in the Bay Area, 1980–2018



Source: The Concord Group analysis of the U.S. Census Bureau's Building Permits Survey, https://socds.huduser.gov/permits

3 Romem, Issi, "America's New Metropolitan Landscape: Pockets of Dense Construction in a Dormant Suburban Interior," BuildZoom, February 1, 2018, https://www.buildzoom.com/blog/pockets-of-dense-construction-in-a-dormant-suburban-interior

While housing production declined, the number of jobs rose significantly. From 2011 to 2017, the region added 658,000 jobs and 140,000 housing units, or 4.7 jobs for every housing unit. In many parts of the region, particularly those areas closest to the explosion in tech jobs, the ratio was significantly higher.

FIGURE 2

Ratio of Jobs to Housing in Bay Area Counties

COUNTY	JOBS TO HOUSING RATIO 2004–2008	JOBS TO HOUSING RATIO 2011–2017
San Francisco County	4.27	6.26
Alameda County	-0.05	3.86
Contra Costa County	0.66	3.04
San Mateo County	0.91	8.14
Santa Clara County	1.71	4.15
Marin County	0.27	4.82
Napa County	1.88	8.41
Sonoma County	-0.63	5.15
Solano County	0.55	4.27

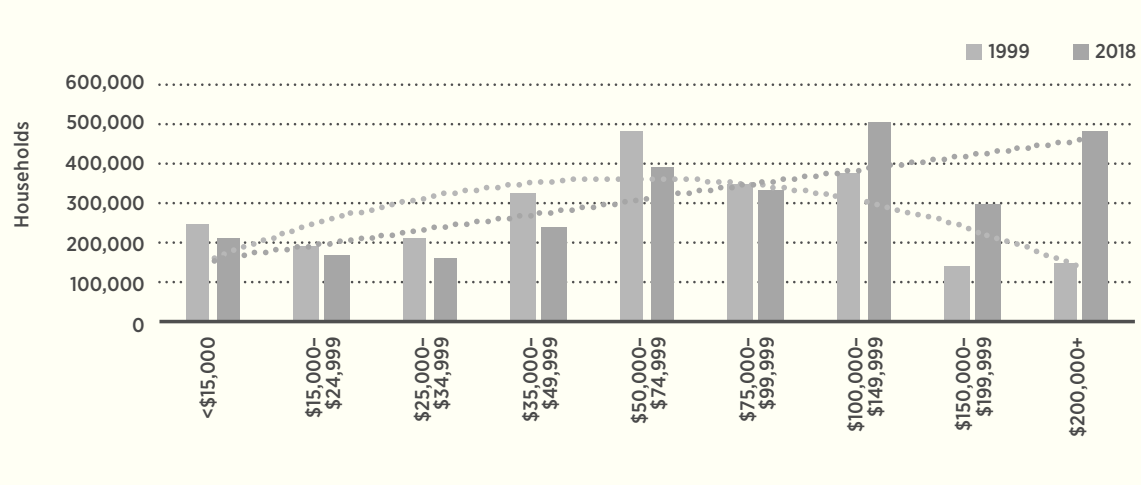
The region's new jobs have attracted new residents. Since 2000, the Bay Area's population has increased by 15%, or roughly 1 million people. Adding more people without sufficiently expanding the amount of available housing has exacerbated the housing shortage and driven up the cost of housing.

Source: Housing permit data from the Department of Housing and Urban Development, https://socds.huduser.gov/permits; primary private job data from the U.S. Census, https://onthemap.ces.census.gov.

Driver 2:
The Bay Area is becoming richer.

The Bay Area is becoming increasingly wealthy. Just 20 years ago, incomes were distributed in a bell curve, meaning that more middle-income people lived in the region than either low-income people or wealthy people. Over the past two decades, that distribution has shifted to favor wealthier households. Since 1999, the Bay Area has seen a decrease of 300,000 households making under $100,000 and an increase of 625,000 households making over $100,000.[4]

FIGURE 3
Change in Bay Area Household Income Distribution, 1999–2018



Previous SPUR research provides two explanations for the shifts in household income.[5] The first is that wages in high-wage occupations have grown much faster than wages in low- and middle-wage occupations. The second reason is that middle-wage jobs did not grow during the past decade and are projected to grow more slowly than high- and low-wage jobs in the future. Some other reasons for shifts in income could include changes in household formation (when people marry or move in with roommates or family members) and wage increases over time as some people have moved up the job ladder. The net result is that as more higher-income households compete for a limited number of available homes on the market, they bid up rents and purchase prices across the board. This particularly affects new entrants into the housing market, making finding a first-time home expensive — if not impossible — for everyone but the high earners.

4 Analysis by the Concord Group. Note that income figures are not inflation-adjusted because typical inflation adjustments use housing as a major component of ongoing Consumer Price Index calculations. If income is inflation-adjusted to include housing costs, the enormous impact that housing has on income distribution would be eliminated from the analysis.

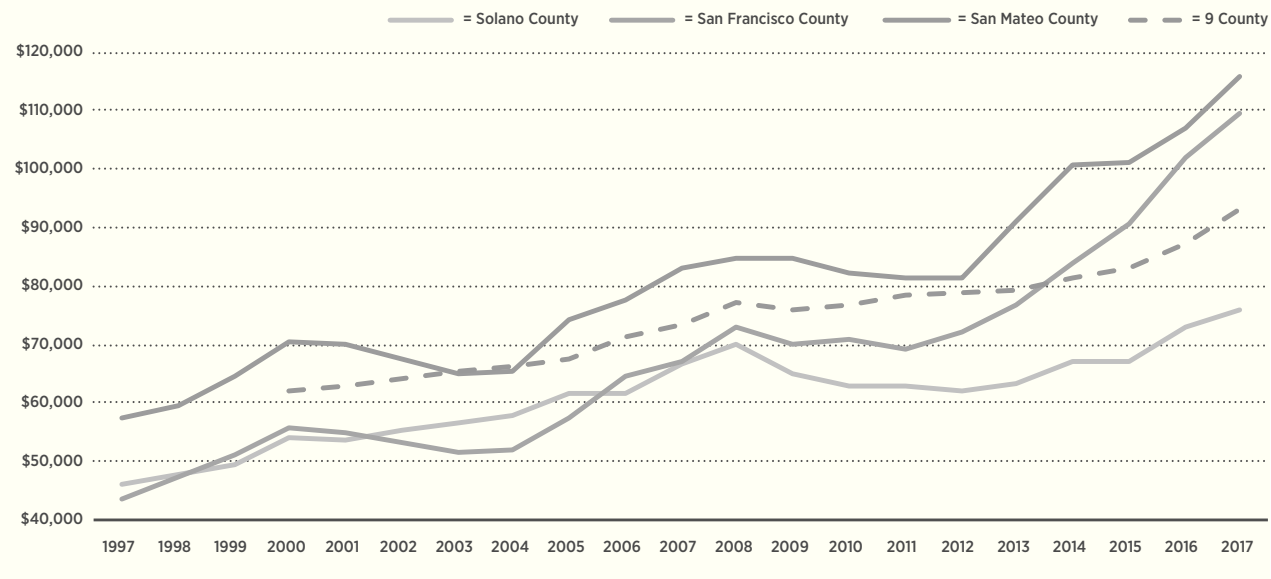
5 Levy, Stephen, "How the Retirement Wave Will Impact Bay Area Jobs and Workers," SPUR, 2019, https://www.spur.org/news/2019-01-17/how-retirement-wave-will-impact-bay-area-jobs-and-workers

Source: The Concord Group analysis of ArcGIS income distribution data and U.S. Census American Community Survey income distribution data, https://factfinder.census.gov (Note: This website will be taken off line on March 31, 2020, and will be replaced by https://data.census.gov/).

The change in the Bay Area's income distribution can be summarized by a significant shift in median income: The median Bay Area household became 50% wealthier over the last 20 years, with median income rising from $60,000 to $90,000.[6]

FIGURE 4
Change in Bay Area Median Household Income, 1997–2016

Median household income has grown significantly in the Bay Area over the last 20 years. San Mateo, San Francisco and Solano counties are included to show the range of distribution across the region.



These shifts have enormous implications not just for the Bay Area but for the 21-county Northern California megaregion, a geography that stretches from Santa Cruz to Sacramento. As more people move out of the Bay Area to seek affordable housing, the income distribution of the megaregion has also shifted, albeit less dramatically in the 12 outer-region counties than in the nine-county Bay Area.[7] The 12 outer counties — Mendocino, Lake, Colusa, Yolo, Sacramento, Placer, San Joaquin, Stanislaus, Merced, San Benito, Monterey and Santa Cruz — saw growth in households making $50,000 to $75,000 but still saw losses in households making under $50,000.

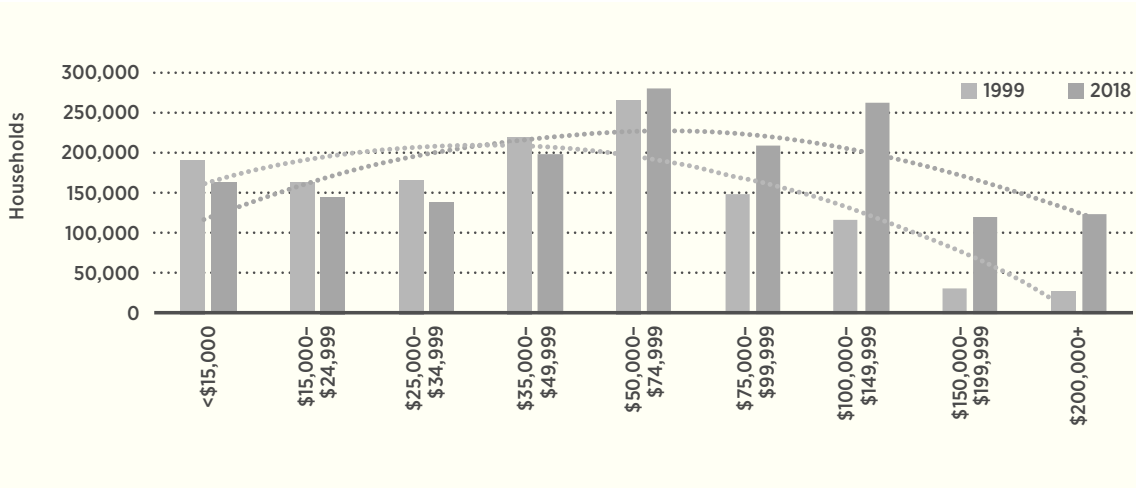
6 Analysis by the Concord Group. Note that income figures are not inflation-adjusted, as explained in footnote 4.

7 Analysis by the Concord Group. Note that income figures are not inflation-adjusted, as explained in footnote 4.

Source: The Concord Group analysis of Federal Reserve Bank of St. Louis (FRED) median household income, https://fred.stlouisfed.org. Source: The Concord Group analysis of ArcGIS income distribution data and U.S. Census American Community Survey income distribution data, https://factfinder.census.gov (Note: This website will be taken off line on March 31, 2020, and will be replaced by https://data.census.gov/)

FIGURE 5

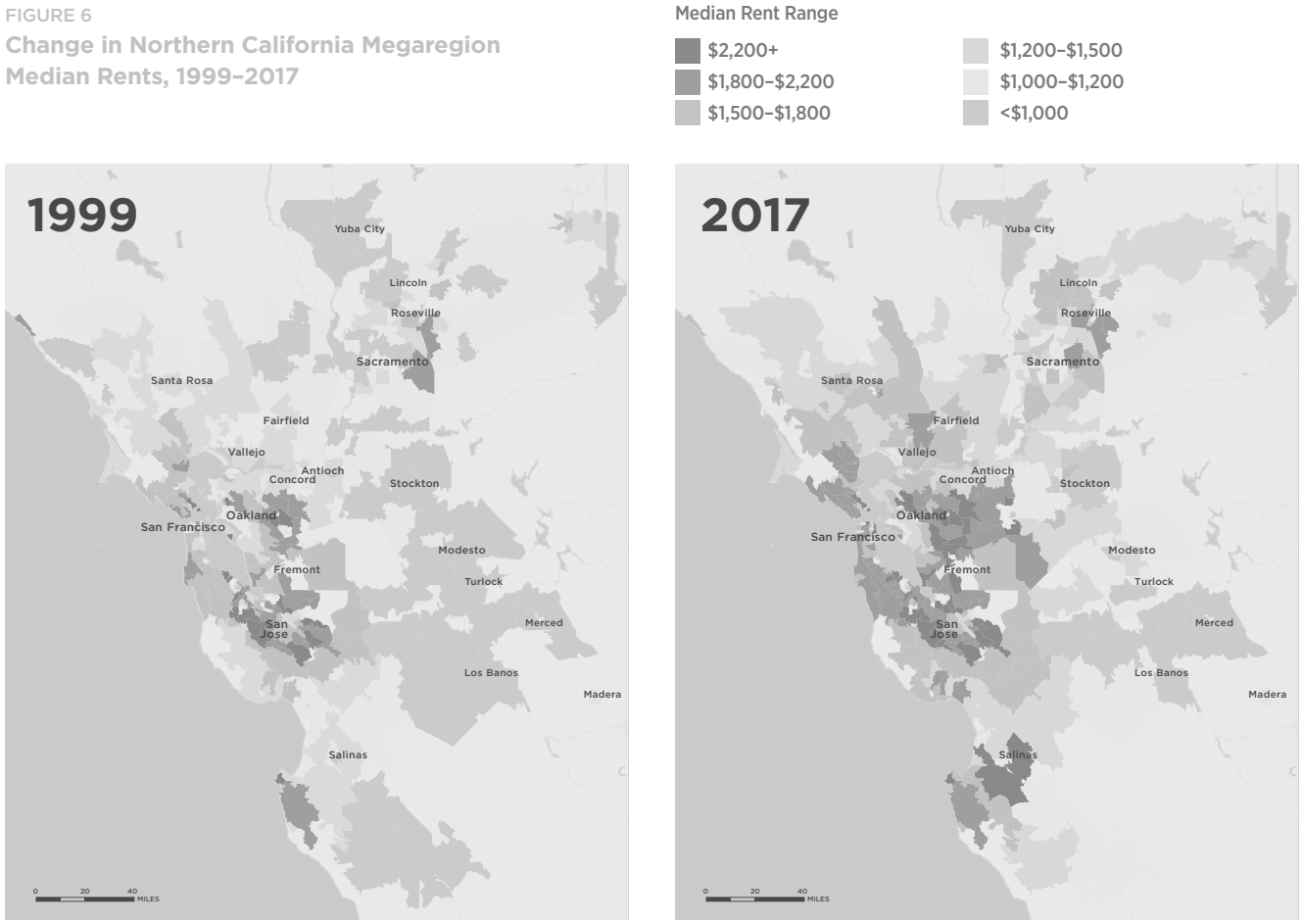
Change in Outer-Region Household Income Distribution, 1999–2018



Unsurprisingly, during this same time period, housing prices in the megaregion have increased as well, although the starkest increases have occurred mainly within the nine-county Bay Area.

FIGURE 6

Change in Northern California Megaregion Median Rents, 1999–2017



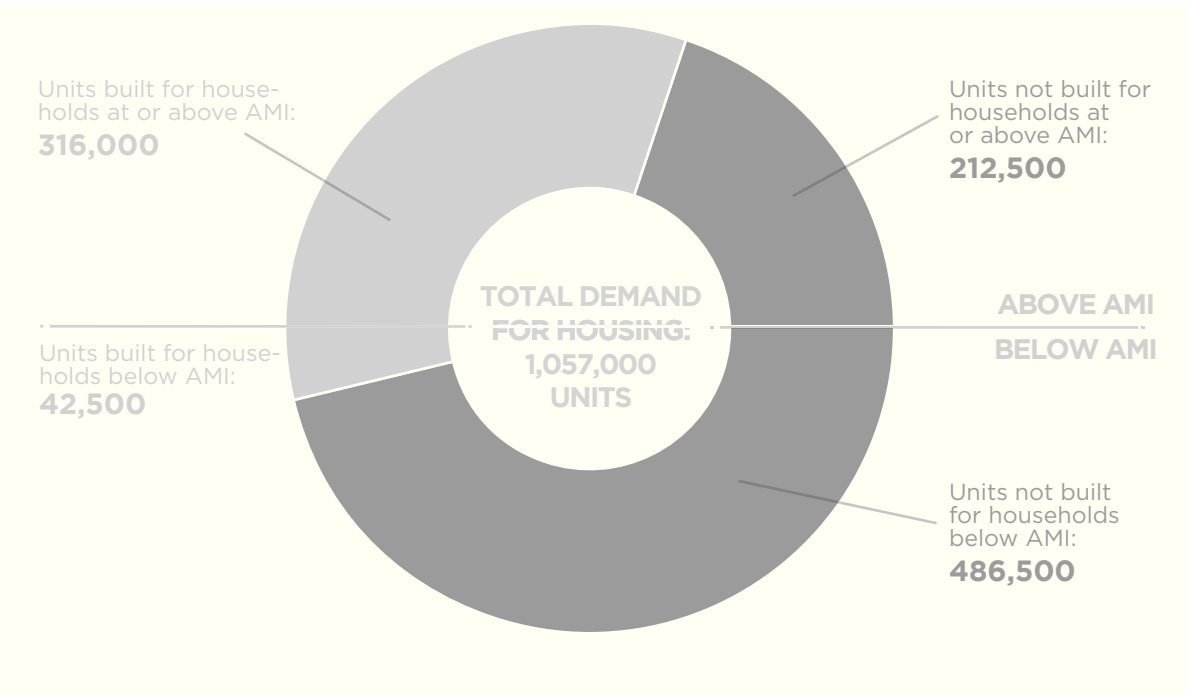
How much housing should the Bay Area have built?

Escalating housing unaffordability has been a contributing factor to massive income distribution changes since 1999, increasing the number of evictions, displacing historic residents of Bay Area communities and threatening the health and growth of the region. How much housing would the Bay Area have needed to build over the last 20 years to prevent income inequality from getting worse? Working with the Concord Group, SPUR sought to answer this question.

We found that the Bay Area saw the construction of 358,500 total housing units over a time period where typical long-term regional growth patterns would have called for a little over 1 million units. This created a shortfall of 699,000 housing units. The market largely served those able to pay the most for housing. Roughly 316,000 of the newly built units were rented or sold to those with higher incomes and/or higher levels of wealth, who were able to absorb the rapidly rising housing costs. At the same time, affordable housing developers built roughly 42,500 units of permanently affordable subsidized housing — not nearly enough to satisfy the demand for housing at the lowest end of the price spectrum. The missing 699,000 units fall into two categories: 486,500 units of housing needed for those below the median income and 212,500 units of housing needed for those above the median income, meaning that the demand for affordable and middle-income housing went largely unmet.

FIGURE 7
Historical Housing Shortfall
Bay Area Housing Demand, 2000–2018

How much housing would the Bay Area have needed to build over the last 20 years to prevent income inequality from getting worse? Analysis by SPUR and the Concord Group shows a shortfall of 699,000 housing units, most of them for households below the area median income (AMI).



Data visualization by Justin Fung. Source: See appendix for sources and methodology.

What was the impact of this failure to produce enough housing? Where did all of those people go? As SPUR has written about previously,[8] some moved to other places, some decided to stay and pay more of their income toward rent and others never showed up in the first place: Individuals who may have contemplated moving to the Bay Area decided to go elsewhere due to the region's high housing costs. Of those who have stayed, some live in overcrowded housing, doubling up with friends and family, or in units that are ill-suited to their family size. Others have not left their childhood homes, delaying adulthood. Of those who have left the Bay Area, some have moved to outer-county cities such as Sacramento in search of cheaper housing,[9] enduring lengthy super-commutes to keep their Bay Area jobs. Others have left Northern California altogether for more affordable metro areas, like Denver or Austin. Most distressing of all, many have lost all forms of housing, leading to the region's current homelessness crisis.

8 Terplan, Egon, "How Much Housing Should the Bay Area Have Built to Avoid the Current Housing Crisis?," SPUR, February 21, 2019, https://www.spur.org/news/2019-02-21/how-much-housing-should-bay-area-have-built-avoid-current-housing-crisis

9 Kneebone, Elizabeth and Issi Romem, "Disparity in Departure: Who Leaves the Bay Area and Where Do They Go?," Buildzoom and Terner Center for Housing Innovation, http://ternercenter.berkeley.edu/uploads/Disparity_in_Departure.pdf

How much housing does the Bay Area need to build for the future?

We also investigated how much and what type of housing the region should produce to keep up with future demand. More housing will be needed as the region's children grow up and create families of their own and as the economy continues to evolve, adding new workers in the decades to come. Accounting for growing demand is particularly important in stemming the flow of lower- and middle-income households from the region.

It's not possible to know how much the region's population will grow over the next 50 years, but data analysis can offer helpful projections. For this investigation, our partners at the Center for Continuing Study of the California Economy estimated a high population growth target and a low population growth target.[10] The Concord Group then modeled what those targets mean for housing demand. Using the high growth projection (one that includes more aggressive assumptions regarding levels of immigration and job growth), SPUR estimates that the Bay Area will need a minimum of 1.5 million new units between now and 2070 both to keep up with population growth and to stop the current trend of losing low- and moderate-income households as the region gains wealthier households.

If we include the existing housing shortfall — the 699,000 units the region should have built over the last 20 years but didn't — we estimate that the Bay Area needs to produce a minimum of 2.2 million units by 2070, or roughly 45,000 units per year (see Figure 9). We believe it is important to include the shortfall, as current residents of the Bay Area are already experiencing the impacts of the region's failure to deliver a sufficient amount of housing: high housing costs, overcrowding and homelessness. As we have shown, the region's inability to deliver a sufficient amount of housing at all income levels has led to a loss of lower-income households. By addressing the shortfall, the region could ameliorate some of these negative impacts.

SPUR's housing target of 2.2 million units (45,000 per year) is somewhat higher than the regional target developed by CASA (the Committee to House the Bay Area) of 35,000 units per year.[11] McKinsey estimates that California needs to produce a minimum of 3.5 million homes statewide to meet a backlog demand of 2 million homes plus a growth demand for 1.5 million homes by 2025.[12] The Bay Area's housing growth target from 2015 to 2023, set at the state level through the Regional Housing Needs Allocation (RHNA) process, shows a need for 188,000 housing units over an eight-year period, or roughly 23,500 units per year. SPUR is recommending housing growth targets that are almost double the RHNA estimates and slightly more than double the region's annual production from 2000 to 2018.

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10 The Center for Continuing Study of the California Economy provided SPUR with population and job projections as detailed in its report *High and Low Projections of Jobs and Population for the Bay Area to 2070 — Projection Framework, Specific Assumptions and Results,* https://www.spur.org/sites/default/files/wysiwyg/CCSCE_High_and_Low_Projections_of_Jobs_and_Population_for_the_Bay_Area_to_2070-Projection_Framework_Assumptions_and_Results.pdf
The report included a high growth target and a low growth target based on national projections for jobs and population, as well as assumptions about immigration, growth in various economic sectors and the share of the population and job growth that the Bay Area will attract. SPUR chose to base its analysis on the high growth projection due to the following factors. First, it is unknown how rapidly the Bay Area's population will grow, but it most likely will reach both the low and the high targets eventually, if not within 50 years. Planning for the high growth target enables the region to fully meet future housing demand and plan for appropriate density. Second, if housing growth exceeds population growth targets, then housing prices might stabilize or decline for a period of time. Stabilizing prices would halt further displacement. While a period of declining prices might make existing owners worse off, it might help renters and assist many in the middle of the income distribution in buying a home for the first time. It is also easier to stop building when prices drop too quickly than it is to begin building rapidly when housing prices spike.

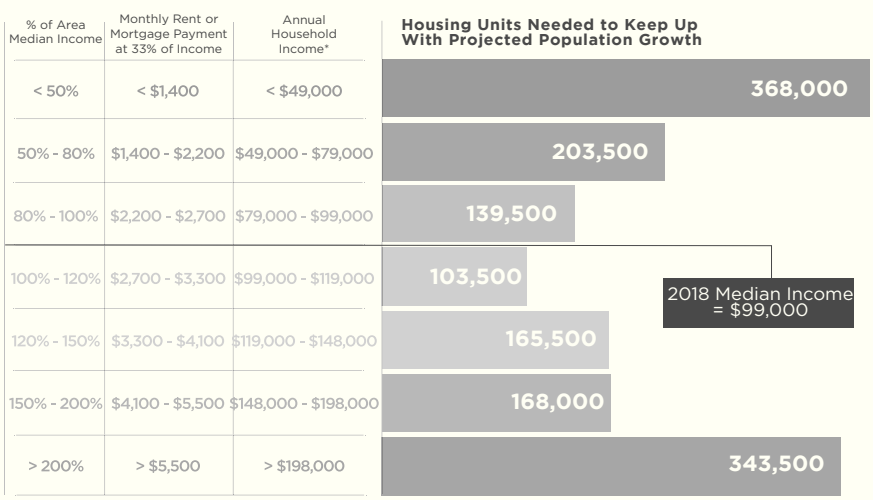
11 CASA, *CASA Compact: A 15-Year Emergency Policy Package to Confront the Housing Crisis in the San Francisco Bay Area,* January 2019, https://mtc.ca.gov/sites/default/files/CASA_Compact.pdf

12 McKinsey Global Institute, *A Tool Kit to Close California's Housing Gap: 3.5 Million Homes by 2025,* October 2016, https://www.mckinsey.com/~/media/McKinsey/Featured%20Insights/Urbanization/Closing%20Californias%20housing%20gap/Closing-Californias-housing-gap-Full-report.ashx

FIGURE 8

How Much Housing Does the Region Need to Build?

Projected Bay Area Housing Demand at All Income Levels, 2018–2070



The Concord Group's model (see Figure 8) looks at housing demand at various income levels based on population growth and seeks to answer the question: How much housing does the Bay Area need to add at different price levels to prevent income inequality from getting worse? It assumes that those who left the Bay Area over the last 20 years aren't coming back and focuses on making things better for the people who are here now and those who might come in the future.

It's important to note that the Concord Group's modeling doesn't answer the question: How much housing is needed to drive down housing prices? This question is notoriously challenging to answer accurately due to the confluence of many factors. To take just three issues: First, developers won't build new housing unless they are able to cover the costs of construction (labor, materials, land and financing). The ability to cover these costs is often dependent on rising housing prices. If housing prices drop below the level needed to build new units, private developers will stop building new housing and prices will rise. Second, if housing prices do decrease, then the Bay Area becomes a more desirable place to live for more people, which increases demand, and that increases prices. Lastly, driving housing prices down (rather than just flattening out price increases) can have negative impacts for homeowners, who can find themselves upside down on their mortgage if what they owe is more than the value of their home.

Because it's so hard to answer the question of how much housing the region would need to build to drive prices down, we are treating the answers that come from our modeling as minimum targets, knowing that the Bay Area would need to outproduce these numbers by some factor in order to reduce housing prices over time. It will be important to develop a housing delivery system that can change based on housing prices, allowing for more rapid housing production when prices spike. This system should also take into account the locations and types of housing needed to address demand.

The Bay Area will also need to adopt new policies to help develop housing for people at different incomes. The region will still need to produce a significant amount of market-rate housing — a minimum of 343,500 units for households making more than 200% of the area median income. For those at 80% of the area median income and below, the region will need to produce a minimum of 571,500 units. And for those between 80% and 200% of the area median income, another 576,500 units will be needed.

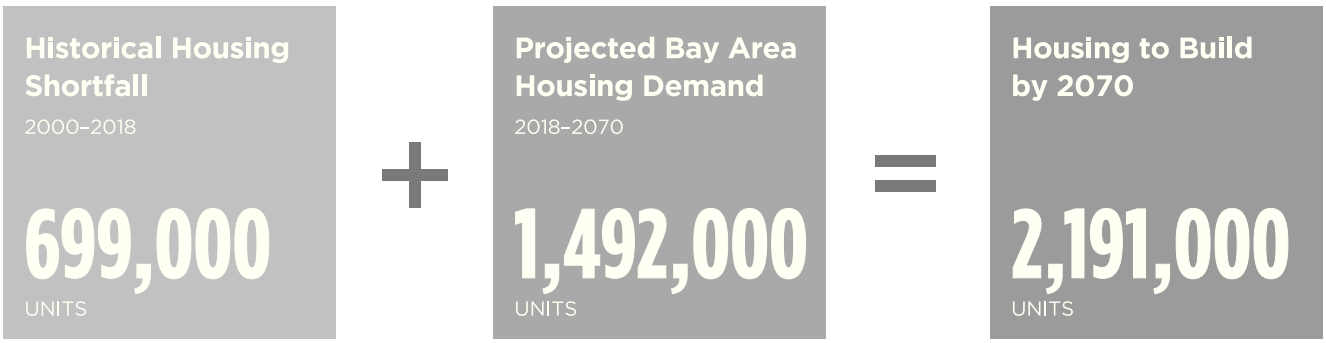
Data visualization by Justin Fung. Source: See appendix for sources and methodology.

FIGURE 9

SPUR's 2070 Housing Target

Total Bay Area Housing Demand, 2000-2070

By adding the existing housing shortfall from Figure 7 to the projected housing need in Figure 8, SPUR estimates that the Bay Area needs to produce almost 2.2 million new housing units by 2070, or about 45,000 units per year.



Source: See appendix for sources and methodology.

What will it take to get there?

SPUR is deep in the process of developing an agenda to address the Bay Area's affordable housing challenge at the scale of the problem. While housing unaffordability may seem like an impossible problem to surmount, there are steps that those of us who live and work in the Bay Area can take. We can double the amount of housing our cities build, change our taxation and governance structures to fund the housing we need and adopt policies to protect the people who live here now. But to make all of this happen requires political will. The following are SPUR's initial thoughts about what it will take to create an affordable region.

Treat housing as infrastructure.

Housing is not something that's nice to have, like a new pair of shoes or a vacation. It is critical to human beings to have a place to live, just as it is critical to have food to eat, clean water to drink and power to provide heat in the winter. When we need new water pipes to ensure regional access to clean water, government doesn't just change the zoning code to allow for the new pipes and wait for the private sector to build them. Government develops the plan for the new water pipes, the public funds their construction and the government hires private contractors to build them.

If we treated housing as infrastructure, the same way we treat roads and water delivery as infrastructure, what in our housing delivery system would change? For starters, it might not be enough to rely solely on the private market to provide enough housing. Privately financed development in the Bay Area requires the careful alignment of a variety of factors: a local jurisdiction that will permit enough housing to be built, land prices low enough for the developer to recoup the cost over time, access to sufficient private lending at a low-enough rate to finance the construction, a workforce available to build the housing — and rising housing prices to pay for all of the above. This system of financing often means that housing can only be built when housing prices are escalating. When the market is down, housing production slows to a trickle — or sometimes stops altogether.

What if we rethought some aspects of this housing delivery system in order to achieve different objectives? For example, what if we could use public financing to build housing, particularly affordable and middle-income housing, at the bottom of the market (when land is cheaper and labor is more available) rather than at the top of the market? Being able to deliver housing at the low end of the market would have the added benefit of providing construction jobs throughout the market cycle, making them more secure over time.

What if there were other ways the public sector could provide readily available, lower-cost capital to finance the creation of middle-income housing — in ways that didn't cannibalize funding for more deeply affordable housing? And what if we were able to squeeze risk out of the development process by ensuring the faster, clearer permitting of housing so that developers functioned more like contractors? If their role was more focused on building the housing rather than negotiating a complicated and risky entitlement process, could they bring housing to market at more affordable price points?

It is not impossible to devise a different housing system than the one we have today. Other countries have made it a societal priority to build enough housing for everyone.[13] We can learn from them.

13 For example, in Vienna, roughly half of the city's housing stock is highly regulated, affordable "social housing." See: Holeywell, Ryan, "Vienna Offers Affordable *and* Luxurious Housing," *Governing*, February 2013, https://www.governing.com/topics/health-human-services/gov-affordable-luxurious-housing-in-vienna.html

Make it less expensive to build housing.

Regardless of how housing is financed, one thing is clear: We need to build significantly more of it — at all price points — if we're going to get ahead of the housing crisis. The region hasn't produced 45,000 units per year since the 1980s, when roughly half of new housing came in the form of sprawl-style single-family housing development, a less expensive building type to construct. Apartments, particularly those in taller buildings, are more complicated to build, so labor costs are higher; they take longer to build, so developers need to pay land costs, such as loan payments, property taxes, insurance and security, for a longer period of time before being able to rent or sell homes; and the construction materials, such as steel or mass timber, are more expensive. In order to produce housing at the scale needed, in denser development patterns that preserve the environment, all of the cost components of housing need to be examined: land prices, financing, construction, building permits, planning and building code requirements, taxes and fees. There can be no sacred cows: We need to examine every aspect of the housing delivery system to see how we can produce enough housing at the scale needed.

Change the governance structure to support housing construction.

Our current system of governance is not up to the challenge of solving our current housing crisis. Each city is responsible for deciding how much housing will be built within its boundaries and in which neighborhoods. The ability to determine zoning at the local level is called "home rule," a power enshrined in our state governance structure. Although the state sets a goal for how much housing each region should produce, and then regional agencies provide each city with a target, there is almost no consequence for failing to meet these goals. So each city has the power to engage in zoning practices that exclude middle- and low-income residents, such as allowing single-family homes only and requiring large lot sizes and plentiful parking. The requirements squeeze out apartment buildings, townhomes, duplexes and other more affordable housing types. Home rule creates a no-win situation for local politicians who support housing. They can approve the housing that is needed and face the anger of constituents who don't want more housing in their neighborhoods, or they can oppose the housing and make the housing crisis worse. The cumulative result of each city deciding how much housing to allow within its boundaries is the current statewide housing shortage.

State government has a very important role to play in addressing the housing crisis because it can create new rules around what gets built where. Senate Bill 50, a proposed bill that would have prevented cities from blocking housing near transit and in areas with good jobs and good schools, is one example of what state legislators can do. State government can also create new sticks and carrots to discourage or encourage certain behaviors. It can diminish local control for jurisdictions that don't help to address the housing crisis and offer new funding for jurisdictions that work to build the housing needed. It can also reform existing laws, like the California Environmental Quality Act, that make it harder to build housing in already-developed areas.

Regional institutions likewise can play an increased role. The newly created Bay Area Housing Finance Authority has certain powers to help create funding for affordable housing. Such an agency could eventually have other powers, including the power to land-bank parcels for future housing development and assemble land for housing construction.

Ensure that low-income people can stay in their current homes while new housing is being built.

If we are really to solve the housing crisis, we need to find ways to enable low-income Bay Area residents to remain in their homes. Roughly 282,000 low-income families in the Bay Area live in housing that is affordable to them but is currently at risk of cost escalation because those units are not subsidized or price-restricted.[14] And of course, many more housing units are occupied by low-income households at unaffordable rents, causing overcrowding and financial strain. As rents continue to rise, vulnerable families are displaced from the Bay Area.

Recent research has brought to light more information about the patterns and ramifications of displacement.[15] Long-standing theories that new housing development causes gentrification and displacement are giving way to a more nuanced understanding of this complicated dynamic. In most cases, new market-rate housing follows, rather than causes, gentrification. Developers seek to purchase land and build new units when and where prices are already on the upswing — that's when the odds are good that they can recoup their costs through higher rents or sale prices. In neighborhoods already experiencing gentrification, the development of new market-rate housing can speed up the process by further signaling that a neighborhood is a desirable place for investment. Once those new buildings are built and occupied, gentrification can intensify, adding to displacement pressures.

How do we address displacement? The solution to this problem is not to stop building market-rate housing. Without a sufficient amount of market-rate housing, high-income workers will continue to outcompete everyone else and shift housing prices for the entire region. Building more housing for market-rate buyers can reduce their impact on the housing market as a whole and help limit rapid increases in price.

But building more housing is only part of the solution. We also need to find ways to combat displacement by enabling low-income residents of the Bay Area to remain in their homes.

Finding ways to strengthen community ownership of land, taking existing housing out of the speculative market and making it permanently affordable, and developing other tools to stabilize neighborhoods are of critical importance in addressing the housing crisis. Helping low- and moderate-income families find a path to homeownership (without being swept up in the next foreclosure crisis) is another way to engage the problem. Thoughtful interventions that protect renters, like California's recent anti-price-gouging law,[16] are also needed.

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14 Analysis completed by the California Housing Partnership and Enterprise Community Partners. This number represents an estimate of the total number of unrestricted units offered at rents affordable to low-income (< 80% Area Median Income [AMI)]) households *and* occupied by either an extremely low-income (< 30% AMI), very low-income (< 50% AMI) or low-income (< 80% AMI) household. While this number accounts for most deed-restricted affordable housing, due to data limitations the methodology does not incorporate public housing or locally restricted housing, such as units made affordable through inclusionary zoning. It also excludes housing occupied by tenants using a Housing Choice Voucher, since the units themselves are technically still subject to changes in the market and landlord participation is voluntary.

15 The Urban Displacement Project at UC Berkeley has developed substantial tools to understand displacement pressures in the Bay Area. See: https://www.urbandisplacement.org/

16 Chandler, Jenna, "Here's How California's Rent Control Law Works," *Curbed,* January 6, 2020, https://la.curbed.com/2019/9/24/20868937/california-rent-control-law-bill

Add significant new resources for affordable housing and find ways to build a lot more of it.

Stabilizing existing housing for low-income people and building the amount of affordable housing the Bay Area needs over the next 50 years will require a significant realignment of resources. It is important to note that the past 50 years of housing policy have predominately benefited one segment of the population: property owners, in particular white homeowners, who were not harmed by historic redlining policies. These laws systematically denied communities of color low-cost mortgages and other resources needed to build wealth. As a result of these disparities, white families have greater homeownership rates and have been able to transfer far more wealth over generations than families of color.[17] The largest housing program in the country has been the mortgage interest income tax deduction, which benefits only those homeowners with enough income to qualify for a deduction. In 2017, the cost of this program was $71 billion. While the Trump tax plan of 2017 has reduced the value of the mortgage interest income tax deduction to an estimated $41 billion,[18] none of the cost savings was redistributed to affordable housing programs.

California needs to consider significant new ways to fund affordable housing. It's time to reexamine Proposition 13, the 1978 law that caps property tax increases for both businesses and homeowners. Prop. 13 limits the taxable value of property to its last sale price, even if that sale was decades ago. This has dramatically curbed the amount of funding available for all public goods in California, including affordable housing. We need to find ways as a society to pay for affordable housing, not just through fees on new housing construction or large bond issues that require passage every few years, but through ongoing, stable, large-scale programs that are sized to address the need.

Affordable housing faces the same problems as market-rate housing. Construction costs are the same no matter if the housing is for low-income or high-income residents. The entitlements process is uncertain, as affordable housing must win approvals in jurisdictions that may not want housing for low-income families. And affordable housing often faces even more scrutiny than market-rate housing during the permitting process. There is also significant uncertainty in financing, as affordable housing developers must pull together a dizzying array of funding sources in order to make projects financially viable. This process has led to skyrocketing development costs. We need to find ways to reduce cost and risk in the affordable housing development process so we can build more housing more quickly at a reasonable cost.

Build housing for the "missing middle."

SPUR's research has found that the private real estate market addresses the needs of the highest-income households. These households outcompete and set prices for everyone else due to the limited supply of housing. And while the prices they pay are at record highs, households in this category are not in fact paying a higher percentage of their income now than they have historically. At the same time, affordable housing developers, subsidized by public funding, have made a valiant effort to build permanently affordable housing for the region's

17 Traub, Amy et al., *The Racial Wealth Gap: Why Policy Matters,* Demos, June 21, 2016, https://www.demos.org/research/racial-wealth-gap-why-policy-matters

18 Tax Policy Center, "Key Elements of the U.S. Tax System," *The Tax Policy Center's Briefing Book,* https://www.taxpolicycenter.org/briefing-book/what-are-tax-benefits-homeownership

lowest-income households. But there is a significant part of the population that is not served by either the existing market or subsidized affordable housing programs: the "missing middle."

As mentioned above, SPUR estimates that over the next 50 years, in order to accommodate future growth, the Bay Area will need to build 576,500 units that are affordable to people making between 80% and 200% of the area median income. One part of the solution is to allow enough market-rate housing to be built to lower prices enough that eventually a larger percentage of middle-income people can participate in the housing market. But another part of the solution involves developing new programs and interventions that can reach middle-income households. Secondary units, smaller units that come without a parking space, mixed-income housing that uses the proceeds from market-rate units to subsidize middle-income units, and co-housing (where households collectively finance housing and some common spaces are shared)[19] all need to be examined as tools to address this portion of the market.

Change the cultural assumptions about housing.

Lastly and perhaps most importantly, we need to change the way we think about housing. The American Dream has always involved land ownership, from the Jeffersonian agrarian ideal[20] to the cultural elevation of the single-family home and the white picket fence. Yet other countries and cultures do not place homeownership on such a pedestal. Part of the cultural value of homeownership has to do with the role it plays in the United States as a primary mechanism of wealth generation and wealth transfer from one generation to the next. Another part has to do with our country's extraordinary lack of a social safety net relative to other developed countries. One's ability to retire and enjoy old age often hinges on property ownership. But the American conception of property rights has deeply negative consequences for renters. Unlike homeowners, most renters can't rely on being able to stay in their homes for the long term and aren't guaranteed stable housing costs.

If we are going to change our housing system in any meaningful way, we need to change our collective dream. What if we dreamed of a future where all families could afford housing and go to great schools? Where no one had to live in fear that the next illness or change of job could result in losing their home? Where commutes were short and pleasant and it was easy to get around by train, bus, biking or walking? What if there were ways to build assets for future generations that didn't involve owning a home? What if asset building were not a matter of life and death because our society took care of its people? What if homelessness were not tolerated and we found a way to house our most vulnerable populations?

Dreaming a new dream is the prerequisite for a better future. It's time for us to rise to the challenge.

19 Wang, Kristy and Benjamin Grant, "Could Germany's Co-Developed Urban Housing Be a Model for the Bay Area?," SPUR, September 21, 2017, https://www.spur.org/news/2017-09-21/could-germany-s-co-developed-urban-housing-be-model-bay-area

20 "Jeffersonian Ideology," *U.S. History Online Textbook,* http://www.ushistory.org/us/20b.asp

Appendix

Methodology to Determine "A Historical Housing Shortfall" (Figure 7) and "How Much Housing Does the Region Need to Build?" (Figure 8)

Figures 7 and 8 in this paper, "A Historical Housing Shortfall" and "How Much Housing Does the Region Need to Build?" were developed by The Concord Group (TCG) to illustrate demand for housing at each whole dollar of income and monthly housing cost, which means that the model reflects true demand for each individual income. For the model, TCG used data from Claritas's Spotlight, a syndicated data source that provides yearly demographic data for the United States. This model specifically used the household income distribution from the year 2018. Spotlight, like the U.S. Census, presents its household income distribution in ranges ($25,000 to $50,000, $50,000 to $75,000, etc.). In total, there are 10 delineated income ranges.

TCG made a set of assumptions that informed the model. First, that "housing affordability" would be defined as a household spending no more than 33% of its income on housing costs and that every household would demand housing at that percentage of their yearly income. TCG then quantified the units demanded at each household income range based on each household in that income range spending 33% of its income on housing. For example, households making under $49,000, or under 50% of the area median income, would have a maximum affordable housing cost of $1,400 per month. The equation to reach this figure is (Annual Income x Housing Burden [33%]) / 12 (months in a year).

Second, TCG assumed that households in the nine-county Bay Area would grow at a rate determined by the Center for the Continuing Study of the California Economy (CCSCE). CCSCE used two different growth scenarios: a high growth potential and a low growth potential for the nine-county Bay Area. The maximum growth scenario projected 1% growth through 2040, 1% growth from 2040 to 2050, 0.5% growth from 2050 to 2060, and 0.5% growth from 2060 to 2070. In total, the maximum growth scenario projected a need for roughly 1,492,000 units of housing in the nine-county Bay Area from 2018 to 2070. The low growth scenario projected 0.6% growth through 2040, 0.4% growth from 2040 to 2050, 0.3% growth from 2050 to 2060, and 0.3% growth from 2060 to 2070. In total, the low growth scenario projected a need for roughly 748,000 units of housing in the nine-county Bay Area from 2018 to 2070.

Third, TCG assumed that the 2018 income distribution would remain constant. While TCG and SPUR do not expect income distribution to remain constant over the next 50 years due to a variety of factors, including wage growth, inflation, employment trends and other major economic events, TCG and SPUR wanted to look at the equitable housing needs independent of those factors and give a broad understanding, in today's dollars, of how much new housing would be needed at which income levels to ensure that housing would be at least as affordable as it is today.

Additional Methodology to Determine "A Historical Housing Shortfall" (Figure 7)

TGC developed a second model to quantify the total housing need for the nine-county Bay Area from 2000 to 2018 as a way to identify the unmet housing needs. In this model, TCG used a household annual growth rate of 2% (the average employment growth per year during this period for the nine-county Bay Area) to reflect what growth could have been for households in this period if sufficient housing had been available. TCG also used the original income distribution of the year 2000. Overall, TCG believes that about 1,057,000 units of housing should have been built during this time period. However, only 358,000 units were built.

The blue number at the lower left represents the affordable housing built in the nine-county Bay Area from 2000 to 2018. The data for affordable units came from the Department of Housing and Urban Development's (HUD's) Low Income Housing Tax Credits Database (https://lihtc.huduser.gov/), which tracks all affordable housing projects, including all projects funded through HUD, state service, local government, for-profit or nonprofit sponsors or any housing project with an income limit. TCG has assumed that, while affordable units can affect households making up to 80% of the area median income, these units served the lowest-earning households within the nine-county Bay Area. This blue number at the lower left represents the units built that are affordable to those making under 100% of the area median income.

The blue number at the top left of the figure represents the total market-rate units built in the nine-county Bay Area from 2000 to 2018. The data for built housing was taken from HUD's building permit website (https://socds.huduser.gov/permits/), with the assumption that all units from the years of 2000 through 2018 were built and operated at an occupancy of 93%. TCG has assumed that, while market-rate units can affect households making any level of income, these units most likely served the highest-wage earners in the nine-county Bay Area. This blue number at the top left represents the units built that are affordable to those making over 100% of the area median income.

The red number at the bottom of the figure represents the units that should have been built for households below the area median income but were not built. The red number at the upper right of the figure represents the units that should have been built for households above the median income but were not built. Overall, TCG has determined that the housing shortfall for the nine-county Bay Area from 2000 to 2018 was roughly 699,000 units.

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SPUR

654 Mission Street
San Francisco, CA 94105
tel. 415.781.8726
info@spur.org

76 South First Street
San Jose, CA 95113
tel. 408.638.0083
infosj@spur.org

1544 Broadway
Oakland CA, 94612
tel. 510.827.1900
infooakland@spur.org

Attachment 7

See Exhibit D

Exhibit C

The New York Times | https://nyti.ms/342L119

A Black Nurse Saved Lives. Today She May Save Art.

Once a slave, Biddy Mason went on to a life of extraordinary accomplishments. The fact that she figures in W.P.A. murals in San Francisco may save them from destruction.

By Carol Pogash

Published Aug. 11, 2020 Updated Aug. 13, 2020

SAN FRANCISCO — In June, Laura Voisin George, a graduate student, was writing a scholarly article about a series of W.P.A. frescoes at the University of California, San Francisco.

The ten panels of "History of Medicine in California," completed in 1938 by Bernard Zakheim, a Polish-born muralist, show such scenes as Native Americans offering herbs to doctors and a trapper inoculating someone with the smallpox vaccine.

Ms. Voisin George recognized a central figure in one of the vivid social realist tableaus: Biddy Mason, a Black nurse, is depicted alongside a white doctor, as they treat a malaria patient. Mason, an enslaved woman born in 1818, went on to become a midwife, a nurse, a philanthropist and a founder of the First African Methodist Episcopal Church in Los Angeles.

Ms. Voisin George, who studies history at the University of California, Santa Barbara, learned that the frescoes were about to be destroyed while she was researching. The Jewish News of Northern California reported the news. Her reaction, she said, was "What? How could this be?"

U.C.S.F. had announced plans to demolish the building to make way for a state-of-the-art research center. The university had informed Zakheim's son Nathan that if his family didn't retrieve the frescoes, which weigh as much as 2,500 pounds, they would be destroyed.

Bernard Zakheim painting the mural, housed in an auditorium at the University of California, San Francisco, in 1937. UCSF Archives and Special Collections

Until Ms. Voisin George identified Mason, neither the artist's family nor university officials knew about her presence in the frescoes. As news outlets have reported this discovery, Mason has become a star of the murals and their potential savior. An assertion by the federal government that it owns the frescoes has further complicated matters.

Adam Gottstein, the artist's grandson, said that the university's placing responsibility on the family to save the artwork "boiled my blood." It showed a "complete lack of respect and concern for historical art." Mason's presence, he said, "adds considerable pressure to U.C.S.F. to do the right thing."

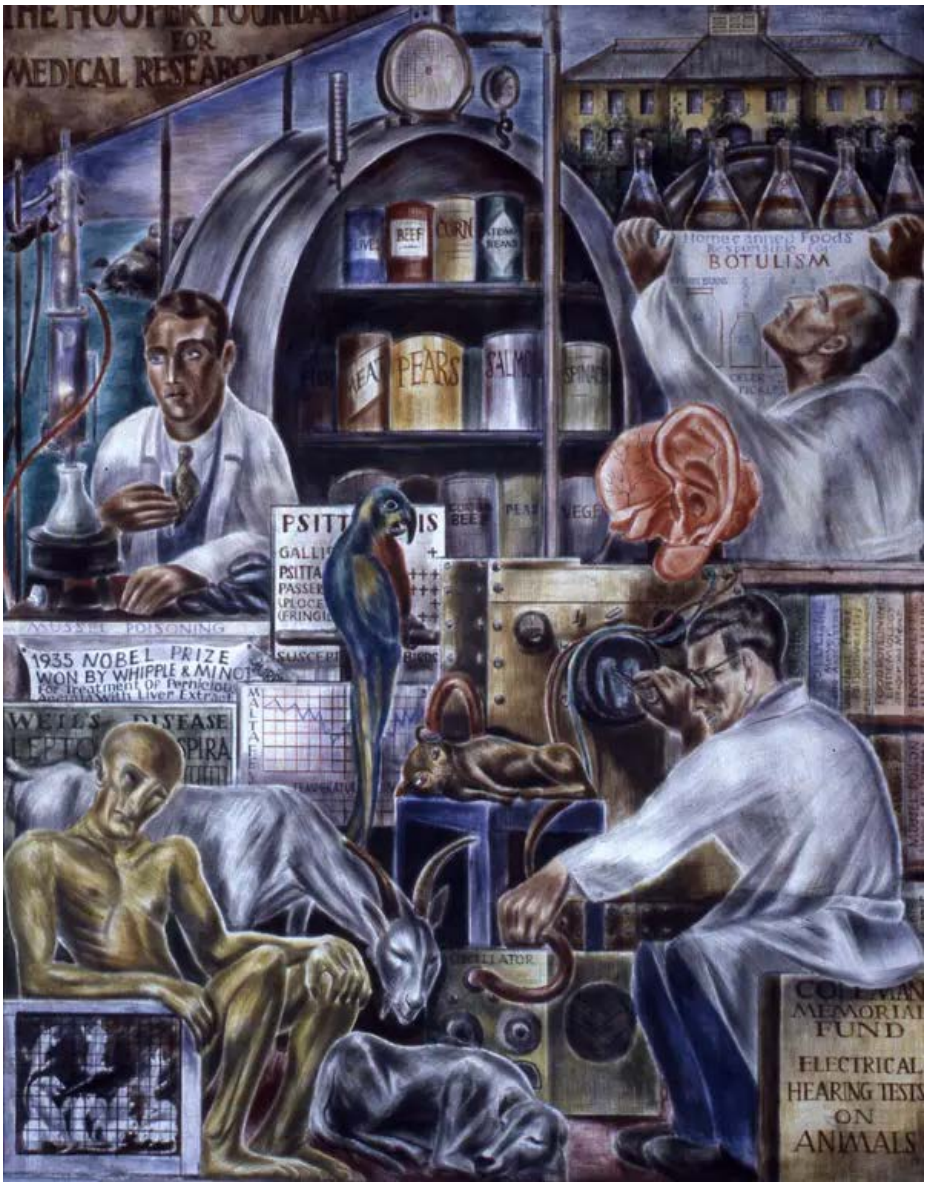
The frescoes were part of the W.P.A.'s Federal Art Project, which hired unemployed artists. Since their creation, the Zakheim murals have been praised, criticized and painted over because a professor said they distracted medical students attending lectures in the auditorium where they are on display. Because of concerns about earthquakes, that auditorium is no longer used.

In 2015, Polina Ilieva, U.C.S.F.'s archivist, wrote that the murals "remain the jewel of the university's art collection."

Zakheim was "one of the most prominent artists in Northern California with a national reputation," said Robert Cherny, a history professor retired from San Francisco State and an expert on New Deal art. "These murals are his largest work," he said. Zakheim, who also created other Depression-era murals for the project, died in 1985.

Nathan Zakheim, the artist's son, an art conservator who in 1976 restored the murals, said he was shocked when he and other heirs received a letter from U.C.S.F.'s lawyers, dated June 4, giving them 90 days to produce a plan to remove the murals. If they failed to respond, the letter said, the university would "presume" it had their consent "to proceed with destruction."

Nathan Zakheim told the university he could move the murals for less than $1 million. There was one hitch: The family lacked the funds.



The series depicts the progression of modern medicine, with this panel focusing on botulism research. UCSF Archives and Special Collections

The series has been criticized for distracting medical students over the years. Liz Hafalia/The San Francisco Chronicle, via Polaris

But the university said it would not spend public money on the move because money was tight during the pandemic. It described the murals as “fragile,” even though an analysis by Page & Turnbull, a historic preservation architecture firm the university hired, said they were “structurally sound.”

Then, on June 18, the university received a letter from the General Services Administration stating that “ownership of the murals resides with G.S.A., on behalf of the United States.” The federal agency wanted the murals to be preserved.

“We were surprised when the G.S.A. said, ‘We assert an ownership interest,’” said Brian Newman, U.C.S.F.’s vice chancellor for real estate. The university said it rejects the G.S.A.’s ownership claim.

Bernard Zakheim with his son, Nathan, in 1967. UCSF Archives and Special Collections

Putting further pressure on the university, The Los Angeles Times published an op-ed piece on July 10 that was based in part on Ms. Voisin George's research. Its headline read: "A monument to California's Black history — and a great work of art — may soon be destroyed."

Cheryl and Robynn Cox, sisters who are descendants of Biddy Mason, grew up knowing that their famous ancestor was painted on the frescoes, as had their mother and grandparents. She also was the subject of a 2015 young adult book illustrated with the mural.

Both women assumed the murals would always be available to the public, until they read the reports about plans to destroy them.

"It's interesting, if you look through the lens of race and gender, this extraordinary Black woman and former slave is bringing attention to the destruction of these murals, but no one personally reached out to us," said Robynn Cox, an assistant professor of social work at the University of Southern California.

"Across the country, everyone is talking about diversity, equity and inclusion," said Cheryl Cox, who works in philanthropy. "To take down a mural of somebody who is showing diversity, equity and inclusion is kind of hard to swallow."

The mural shows "a former slave who is on an equal footing, or maybe an even more than equal footing with white men at a time in which there was still slavery in this country," she added. "I don't know if there's anything like it."

The Cox sisters said they recently met over Zoom with U.C.S.F. officials, including a meeting on Aug. 10 attended by the chancellor, Sam Hawgood.

Last week, the school announced it was seeking bids to remove the 10 frescoes and place them in storage, at a price not to exceed $1.8 million. "We are hoping we can come up with a viable plan for the murals to preserve them," Mr. Newman, the vice chancellor, said.

The federal government response, in an email from Pamela D. Pennington, the G.S.A. press secretary, said: “Until a new location for the murals is determined, their removal, preservation and storage by U.C.S.F. is supported by G.S.A.”

But the descendants of the artist and the famous nurse want the art to be seen.

Mr. Gottstein said, “If they are in storage and never see the light of day, then we will have lost, after all.”

OPINION

Op-Ed: A monument to California's Black history — and a great work of art — may soon be destroyed

Artist Bernard Zakheim showed African American Biddy Mason as an equal among medical authorities in a mural commissioned by UC San Francisco in the 1930s. (Chris Carlsson)

By JACKIE BROXTON AND KEVIN WAITE

JULY 10, 2020 3:18 AM



As antiracist activists topple statues of slaveholders across the country, UC San Francisco threatens to demolish a very different kind of monument: a mural depicting a celebrated former slave.

The work shows Biddy Mason, an African American midwife who rose to fortune in Los Angeles after winning her freedom in the mid-1850s. Since the Great Depression, the mural has been displayed alongside nine others in UC Hall on the university's main campus. But now the building and its artwork are slated for demolition to make way for new office, medical and research space.

In the mid-1930s, UC San Francisco commissioned the Polish-born artist Bernard Zakheim to paint a set of murals of California's medical history. Zakheim, who studied with Diego Rivera, had become regarded as one of the state's major artistic figures. Like his murals in San Francisco's Coit Tower, his UC San Francisco works are landmarks in the bold, modern style of the New Deal era. They have been hailed as "the jewel of the University's art collection."

The panel featuring Biddy Mason is perhaps the most historically significant of the 10 murals. In it, Mason tends to a malaria patient alongside Dr. John Griffin, one of Los Angeles' preeminent early medical authorities. Below, other patients await treatment from Griffin and Mason, who formed a renowned medical partnership in mid-19th century Los Angeles.

What makes the mural unique is its composition. Mason occupies center stage. She's surrounded by a group of white men — soldiers, patients, doctors, city officials — but she's not subordinate to them. Rather, she tends to the patient directly as a medical authority in her own right. Zakheim depicts Mason as she was: a healing presence and a pillar of early Los Angeles.

Biddy Mason began her days in radically different circumstances. Born into slavery in the Georgia cotton belt in 1818, she was seemingly destined for a life of hard labor and a death in obscurity. Like other enslaved African Americans, she lacked a legal family name. She was simply Bridget, or Biddy.

In the late 1840s, Biddy began a long, strange trip — one that took her out of the South and across the continent. She went as a slave, forcibly transported by her master, along with several other Black women and children. They arrived first in Utah before moving to a small Mormon colony in San Bernardino, Calif., in 1851.

Although California was technically a free state, authorities turned a blind eye to slaveholding settlers in their midst. Several dozen slaves worked in San Bernardino alone. Only in 1856 — six years after California outlawed human bondage — did Biddy, along with 13 other African American women and children, win their freedom in a Los Angeles courtroom.

Once free, Biddy took the last name Mason and began an improbable rise through the social ranks of early Los Angeles. She used money earned as Dr. Griffin's assistant to invest in real estate, just as L.A. was beginning to boom. Although illiterate and subject to both racial and gender discrimination, Mason amassed a tremendous fortune. Some estimates place her total wealth at $300,000 (equivalent to $8.5 million today).

Mason is remembered not only for her uncanny business acumen, but also for her philanthropy. She gave liberally — of her time, money and medical expertise — to those in need around Los Angeles. She also co-founded the first African American house of worship in the city. First African Methodist Episcopal Church remains a mainstay of L.A.'s Black community to this day.

Now, a piece of Mason's legacy — the oldest known artistic representation of the famous freedwoman — faces demolition.

University spokespeople claim that UC San Francisco is unable to cover the costs of removing and preserving the murals, estimated at $8 million. If the price of saving 10 frescoes is prohibitive, one wonders where the university will find the funds for its proposed 1.5 million-square-foot expansion project. Perhaps the university could start by dipping into its nearly $4-billion endowment.

Local residents have already begun to protest the development project, set to break ground in 2023. They argue that the expansion will add thousands of workers to the Parnassus Heights campus, further straining the community's overtaxed transit systems and housing options. Critics can add the university's destruction of history to their list of grievances.

The artist's son, Nathan Zakheim, has been given three months to propose a plan to remove the murals at the family's expense. After that, the university will solicit proposals from the public to adopt the murals — again without financial support from UC San Francisco. If no one comes forward: demolition.

UC San Francisco proposes a Silicon Valley solution: a digital re-creation of the murals, which would later be featured in a virtual reality display. Through goggles, visitors would get a secondhand look at art destroyed by the university.

The timing could not be worse. During a crossroads in race relations, when Black American voices are finding new purchase, the university threatens an important piece of Black women's history.

The United States boasts vanishingly few monuments to women of color. Fewer still if the university is allowed to go forward with its ill-considered plans to bulldoze the Biddy Mason mural along with nine others. Black Lives Matter. And so does Black history.

Jackie Broxton is the executive director of the Biddy Mason Charitable Foundation, which provides services and support to L.A.'s foster youth population. Kevin Waite is an assistant professor of history at Durham University and co-director of an National Endowment for the Humanities-funded project on the life and times of Biddy Mason.

LOCAL // BAY AREA & STATE

UCSF New Deal murals could be destroyed

J.K. Dineen

June 12, 2020 | Updated: June 12, 2020 7:13 p.m.

Professor Robert Schindler talks about murals painted by artist Bernard Zakheim on the UCSF Parnassus campus in 2015.

Photo: Liz Hafalia / The Chronicle 2015

A series of celebrated New Deal-era murals on the UCSF Parnassus campus could be destroyed unless someone comes up with as much as $8 million that the school says would be needed to safely move and preserve the artwork.

In 2015, UCSF invited members of the public into a lecture hall on the campus to see what it described as the “crown jewel” of its art collection: a series of New Deal-era frescoesdepicting the history of medicine in California.

Art history buffs flocked to see the murals, which were painted in the 1930s by Diego Rivera collaborator Bernard Zakheim. Emeritus professor of medicine Dr. Robert Schindler called the murals "enormously significant."

Five years later, however, the future of the artwork is uncertain as UCSF prepares to knock down UC Hall, where the 10 frescoes are located, as part of an ambitious plan to build a new 1.5 million-square-foot hospital and research campus there.

In a statement, UCSF spokeswoman Jennifer O'Brien said the university doesn't have the $8 million it would cost to move the artwork to a new building, and moving the "fragile murals would likely cause irreparable damage," she said.

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"Based on these factors, UCSF has decided not to use public funds to physically preserve the murals, especially at a time when the UC system faces financial challenges in the wake of COVID-19," she said.

Instead the university will hire a digital preservation firm to "create a three-dimensional digital recording of the murals that would be prominently highlighted in an interpretive virtual reality exhibit on campus."

O’Brien said the school has reached out to Nathan Zakheim, the 76-year-old son of the artist, to see if the family would like to remove the murals “at their own expense.” The family has 90 days to submit a detailed proposal for how the murals would be removed from the building and preserved. If they do not submit a plan, UCSF will issue a public request for proposals to see if any other individual or group is interested in taking them. If no one responds to that, the murals would be destroyed.

Nathan Zakheim accused the university of “railroading” his family. Zakheim, an art conservator based in Los Angeles, said that the $8 million estimate was “grossly inflated” and that he could do it for $1 million. He suggested that UCSF should “design a square room in the new campus” specifically for the artwork or put it in the library.

“It is a magnificent, unparalleled historic document,” said Zakheim.

“It’s a key part of the university’s history and a key part of San Francisco’s history. If they don’t care about that, well, it’s ridiculous,” he added.

He also said that UCSF administrators had told him that some students and faculty members had complained about the content of the work, particularly the way that Native Americans and Spanish missionaries are depicted.

Bernard Zakheim’s work in San Francisco

Zakheim was a Polish-born San Francisco muralist, best known for his work on the Coit Tower murals. In the early 1930s, he committed himself to the preservation and interpretation of Jewish American life and culture through the making of art. He was one of the organizers of a Yiddish school in the Fillmore District, back when that neighborhood was largely Jewish. He helped found the San Francisco Artists and Writers Union, which lobbied for government arts funding. Eventually that led to the funding of Zakheim’s work in Coit Tower.

In San Francisco, Zakheim’s artwork can be found at UCSF’s Parnassus campus, the lobby of Coit Tower and the San Francisco Jewish Community Center. He also painted murals inside the former Alemany Health Center.

“The Jewish Wedding,” 1933

Jewish Community Center of San Francisco, 3200 California St.

“Library,” 1934

Coit Tower, 1 Telegraph Hill Blvd.

“Community Spirit,” “Growth,” 1934

Former Alemany Health Center building, 35-45 Onondaga Ave.

“History of Medicine in California,” “Modern Medicine,” “Ancient Medicine: Superstition in Medicine,” 1940

UCSF Parnassus Campus, 505 Parnassus Ave.

O’Brien said the subject matter of the murals had nothing to do with the decision to attempt to find a new home for them.

Robert Cherny, an emeritus professor of history at San Francisco State University, said the decision to jettison the murals surprised him, especially since the school seemed enthusiastic about the artwork in the past.

“They seem to be very proud of the murals and very much wanted to share them,” he said. “It’s a big turnaround for the UCSF administration. To me this is just somebody in the UCSF administration saying, ‘We don’t want to bother.’ It’s a very cavalier disregard for both history and art.”

In total Zakheim painted 12 murals at UCSF in 1930s: the 10-panel “History of Medicine in California” and two-panel “Modern Medicine” and “Ancient Medicine: Superstition in Medicine” in the Health Sciences West lecture halls. The latter two works are not threatened with removal.

There is precedent for rescuing Zakheim’s mural art. The Jewish Community Center of San Francisco saved a 1933 fresco, “The Jewish Wedding,” when constructing its current building, and unveiled the restored work in 2004. The Zakheim family assisted in the restoration effort.

J.K. Dineen is a San Francisco Chronicle staff writer.
Email: jdineen@sfchronicle.comTwitter: @sfjkdineen

Large panel from Bernard Zakheim's "History of Medicine in California." (Photo/Courtesy UCSF Archives & Special Collections)

CULTUREART

Jewish muralist's historic work faces demolition at UCSF

BY **LAURA PAULL** | JUNE 18, 2020

How does a significant piece of public art go from being the "jewel of the University's art collection" to a work designated for the wrecking ball in just five years?

That is the question the descendants of the 20th-century Jewish artist Bernard Zakheim are asking UCSF Medical Center, which on June 4 sent a legal letter to a member of the family saying that the murals he painted in the 1930s could be destroyed to make way for construction of a new building.

The 10-panel series "History of Medicine in California," which Zakheim produced between 1935 and 1938, was commissioned by UCSF and partly funded by the Works Project Administration. Installed in Toland Hall, a lecture room inside UC Hall, the vivid images of doctors, lab scientists, suffering and recovered patients have been studied by generations of medical students — except for one 20-year period

after a particular professor objected that the art was a distraction from the lectures and the university wallpapered it over.

Since freed from that censorship, for decades the university has promoted the art as a visual symbol of its humanistic values. In 2015, as part of the institution's 150th anniversary, the public was allowed to tour the murals, and UCSF archivist Polina Ilieva wrote a blog describing them as "the jewel of the University's art collection."

Physicians on the faculty have recorded lectures elucidating the details of the murals to classes and the public, including a 1996 presentation in which Dr. Robert Schindler lauded the murals as "the product of an extraordinary individual."

But now that UC Hall is scheduled to be torn down starting in 2022 to make way for a 27,000-square-foot, state-of-the-art research and academic building — part of a multiyear, multibillion overhaul of the Parnassus campus, paid for in part by a $500 million gift from the Helen Diller Foundation — those values have come into question.

"Up until very recently my impression was that the UCSF administration understood the value of the murals as history and as art and wanted to preserve and conserve them," said Robert Cherny, professor emeritus of history at San Francisco State and author of "Victor Arnautoff and the Politics of Art" and many articles about the artists of the New Deal era, including Zakheim. "An earlier plan was to convert Toland Hall into a community center so that more of the public could see the murals. The new plan is an abrupt turnaround by the university administration."

Zakheim, a major artist of the period who immigrated from Poland to San Francisco in 1920 and studied fresco technique and painting with Mexican artist Diego Rivera, already had made a name for himself as a muralist when UCSF commissioned the work. Most notedly, he had spearheaded the 1934 Coit Tower mural project, which resulted in murals by 25 local artists depicting California life.

But of all Zakheim's output, the massive Toland Hall murals are his largest single work, Cherny said.

According to Nathan Zakheim, his father "considered those to be his greatest murals. They are extremely powerful works."

Cherny regards Bernard Zakheim as "one of the most prominent of the New Deal artists; I'd place him in a group of the top three on the Pacific Coast, with Victor Arnautoff and Lucien Labaudt, who painted the Beach Chalet mural."

Zakheim was also a Jewish artist with "a commitment to Jewish culture," Cherny said.

Leah Royall, one of Zakheim's granddaughters, remembers him as "a character" who spoke five languages in addition to his native Polish.

"In his dusty house on the Sebastopol property that he called Farm Arts, he'd stomp around singing Yiddish songs. He used to glue articles from the Jewish Bulletin [now J.] into his typewritten letters to us, and he loved talking politics. This was a man who opposed 'art for art's sake' — life and his art were informed by his left-wing political convictions," Royall told J.

In 1933, Zakheim created the mural "The Wedding Ceremony" for the JCC of San Francisco. When the old building was torn down for a new one that opened in 2004, the Zakheim family fought for the work's preservation, and the JCC ultimately agreed to remove the mural and reintegrate it into the new facility.

> Erasing artwork that is historically significant to both San Francisco and California stands in stark contrast to the university's original vision.

In its letter to Nathan Zakheim, as well as in an official statement explaining its proposal to replace UC Hall, UCSF cited the conclusions of two historic preservation firms that the removal of the murals prior to demolition would result in irreparable damage to the works.

"UCSF has decided not to use public funds to physically preserve the murals, especially at a time when the UC system faces financial challenges in the wake of Covid-19. This decision in no way has to do with any complaints about the murals," the university said in its official statement. After requesting additional comment from the administration, J. was referred back to the statement.

The UCSF letter offered the Zakheim family a 90-day period to submit a proposal to remove the murals at their own expense, after which the university said it would make a public announcement calling for other proposals to remove and take possession of the murals within an additional 120 days.

The university's estimate of the cost of removal is around $8 million.

Nathan Zakheim, 76, an art conservator based in Los Angeles, says that figure is unnecessarily high. In phone conversations with Brian Newman, UCSF's senior associate vice chancellor in charge of campus space planning, design, construction and management, the artist's elder son said he believed he could get

the job done for under $1 million. The ace up his sleeve is the fact that his father taught him how to remove the murals during the time when they worked together to remove and restore two other murals in UCSF's Cole Hall in 1967.

"These murals can be removed," Cherny concurs. "Bernard Zakheim foresaw that eventuality and planned for it, and taught Nathan the technique. That is what the UCSF administration doesn't seem to acknowledge."

Bernard Zakheim with son Nathan in 1967 discussing mural removal and restoration at UCSF. (Photo/Courtesy UCSF Archives & Special Collections)

The far-flung family of Zakheim's descendants have united in a response to the university that prioritizes the preservation of the murals.

"Ninety days is an unreasonable amount of time, and the clock is already ticking," said Zakheim grandson Adam Gottstein, 64. "I don't want to get into the politics of it; my hyperfocus is to find a resolution that will save the work from demolition."

Zakheim's daughter, 97-year-old Ruth Gottstein, a lifelong social activist and former independent publisher, dictated an irate letter from her assisted-living facility in Jackson, Amador County.

"It is egregious to me that people today assign themselves the moral right to decide what should happen to these historic and irreplaceable pieces of art. They were painted in 1935! These were the thoughts and principles of the artists at that time. To destroy them is to willfully ignore what was taking place in our world and arbitrarily erase significant portions of our history and evolution. Nobody has that kind of authority. Nobody."

She called the university's offer to commission a "three-dimensional digital recording" of the artwork in lieu of preserving the physical murals "a travesty."

Ruth Gottstein's niece, Bethany Stark, took "umbrage" at the university's a priori decision to destroy the murals unless the family took them away.

"These are works that have artistic, historical and community value," Stark said by phone from L.A. "They belong to the community, to the public and to the university. The murals are not just some antique chair that they can say, 'It doesn't work anymore, do you want it back?"

Royall, an editor in London, shared the outrage, describing the university's decision as "criminal short-sightedness."

"Erasing artwork that is historically significant to both San Francisco and California stands in stark contrast to the university's original vision," Royall said.

Ruth Gottstein also says that the history, ideas and research integrated into the murals continue to provide value for present and future generations.

"At a time of a global health care–based pandemic," she points out, "the need for the 'messaging' in my father's works in Toland Hall are ironically more applicable today than ever."

"It is my hope that we can extend the deadline in order to come up with a collaborative solution to save my grandfather's murals," Adam Gottstein wrote in his own June 15 letter to UCSF.

Arts and preservation organizations and concerned individuals around the city are rousing to the cause. On June 23, S.F. Supervisor Aaron Peskin planned to introduce a resolution to the Board of Supervisors to designate the murals as historic landmarks. The motion would have to be taken up by the Historic Preservation Commission and the Planning Department. While such a designation would not legally protect the murals, because the university is a state institution, "I wouldn't initiate this process if I didn't

believe the murals merit protection, and I hope this symbolic action helps to bring the university to its senses," Peskin told J.

Meanwhile, Nathan Zakheim says his ongoing discussions with the university have been good so far.

"I'm not approaching this as an activist," he said. "I'm a technician. I know how to take murals off walls, and that's what I want to do."

Laura Paull

Laura Paull is J.'s Culture Editor, and was a longtime J. freelance writer before that.

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TAG ARCHIVES: TOLAND HALL

Viewing Zakheim Murals at UCSF

Posted on **March 2, 2015** by **Polina Ilieva**

As part of UCSF's 150th anniversary celebration, the university has arranged special public viewing hours for the Zakheim murals through the spring:

Friday, March 13th: 4 – 7 p.m.
Friday, April 17th: 3 – 5 p.m.
Friday, May 22nd: 3 – 5 p.m.

Location:
Toland Hall on the UCSF Campus
533 Parnassus Ave., Room U-142
San Francisco, CA
Map of UCSF Parnassus Campus and Directions (printable PDF)

Recent article in San Francisco Chronicle highlights history of the Zakheim murals at UCSF.

Do you have questions or need additional information about public viewing?
Please contact UCSF Public Affairs: 415-476-2557

Posted in **150th Anniversary**, **Collections**, **Events**, **History**, **Services** | Tagged **Bernard Zakheim**, **murals**, **Toland Hall**, **UCSF history** | **1 Reply**

Recent Acquisition: Bernard Zakheim Collection

Posted on **February 24, 2015** by **Polina Ilieva**

Ever since the Polish-born artist Bernard Zakheim painted a series of murals at UCSF in 1930s they remain the jewel of the University's Art Collection. These murals include ten panel series in Toland Hall, "History of Medicine in California," and two panels originally located in the Cole Hall and later moved to the Health Sciences West (HSW) lecture halls – "Modern Medicine" and "Ancient Medicine: Superstition in Medicine." Zakheim worked with Diego Rivera in Mexico City and is best known for contributing the Library Periodical Room fresco and helping organize the New Deal art project at the Coit Tower in San Francisco. From the time of their unveiling, the archives has been compiling reference materials about these murals and now we are delighted to report that a comprehensive set of materials documenting how these frescoes were created and preserved was donated to UCSF (Bernard Zakheim collection, MSS 2014-15).

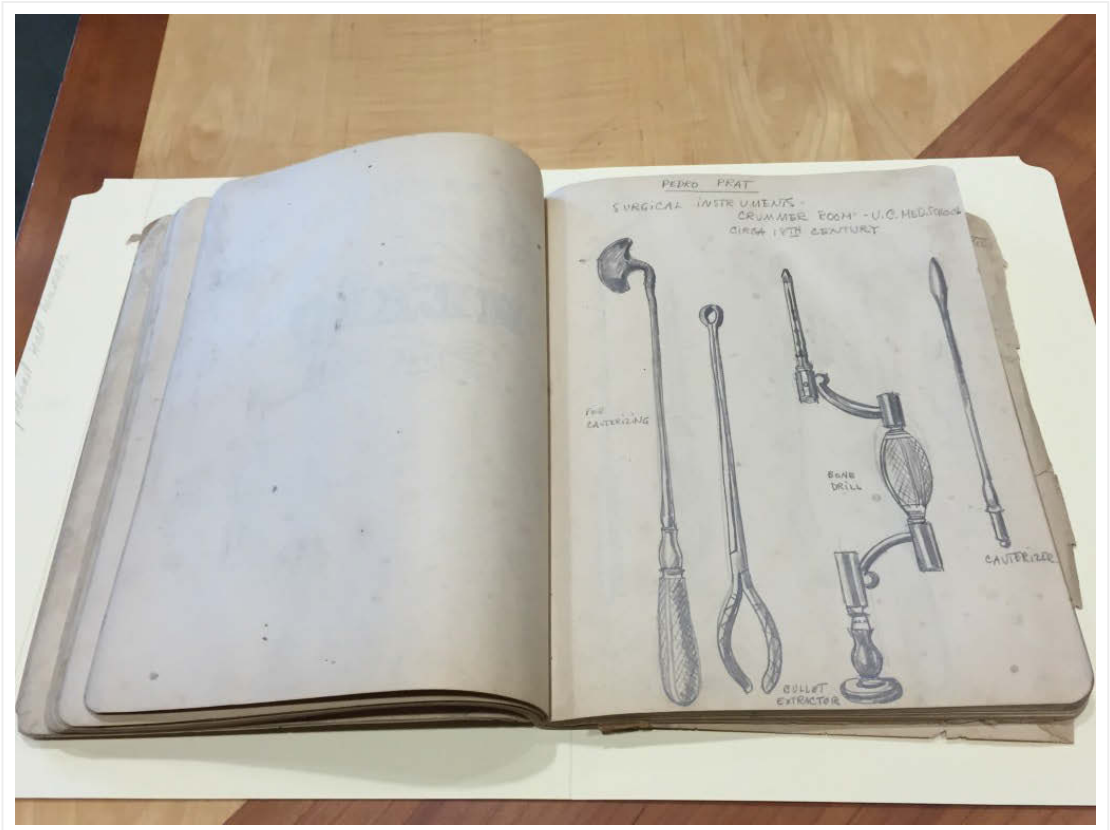
— Viewing murals at Toland Hall at UCSF, left to right: F. Stanley Durie, Superintendent of UC Hospital, Dr. William E. Carter, Phyllis Wrightson, Joseph Allen, State Director of WPA Federal Art Project, Bernard Zakehim (ca. 1939)

Last year I had the privilege to meet one of the sons of the artist who also helped restore the frescoes in 1970s when the wallpaper covering them for almost two decades was removed and the two panels were relocated from the original Cole Hall to HSW.

— Artist Bernard Zakheim with his son Nathan Zakheim (1967)

One of the biggest archives' advocates, Dr. Robert Sherins (SOM, 1963) introduced me to Nathan Zakheim. Nathan, a talented art conservator based in Los Angeles, is the keeper of his father's extensive archives and art collection. Last fall we met at his warehouse to review and pack the documents destined for UCSF.

The idea to commission murals was brought by Dr. Isabella Perry, professor of pathology after seeing the frescoes Zakheim painted at the Alemany Public Health Center and then spearheaded by Chauncey D. Leake, professor of pharmacology and medical historian. The university murals undertaking which was partially funded by the WPA Federal Art Project and also sponsored by the university was a true collaborative effort between Zakheim's team and UCSF faculty (including renowned UCSF doctors, Chauncey D. Leake, George Lyman, Langley Porter, Salvatore P. Lucia, W. E. Carter, and F. W Lynch). The artist was provided unrestricted access to the Crummer Room containing numerous books on the history of medicine, including recently published "California's Medical Story" by Dr. Henry Harris. Zakheim's assistant, Phyllis Wrightson did extensive research about California medical history which becomes apparent in the sketchbook that she kept for the project. The instruments depicted by her on these pages are still preserved at the archives' artifact collection and will be displayed as part of the 150th anniversary exhibit.

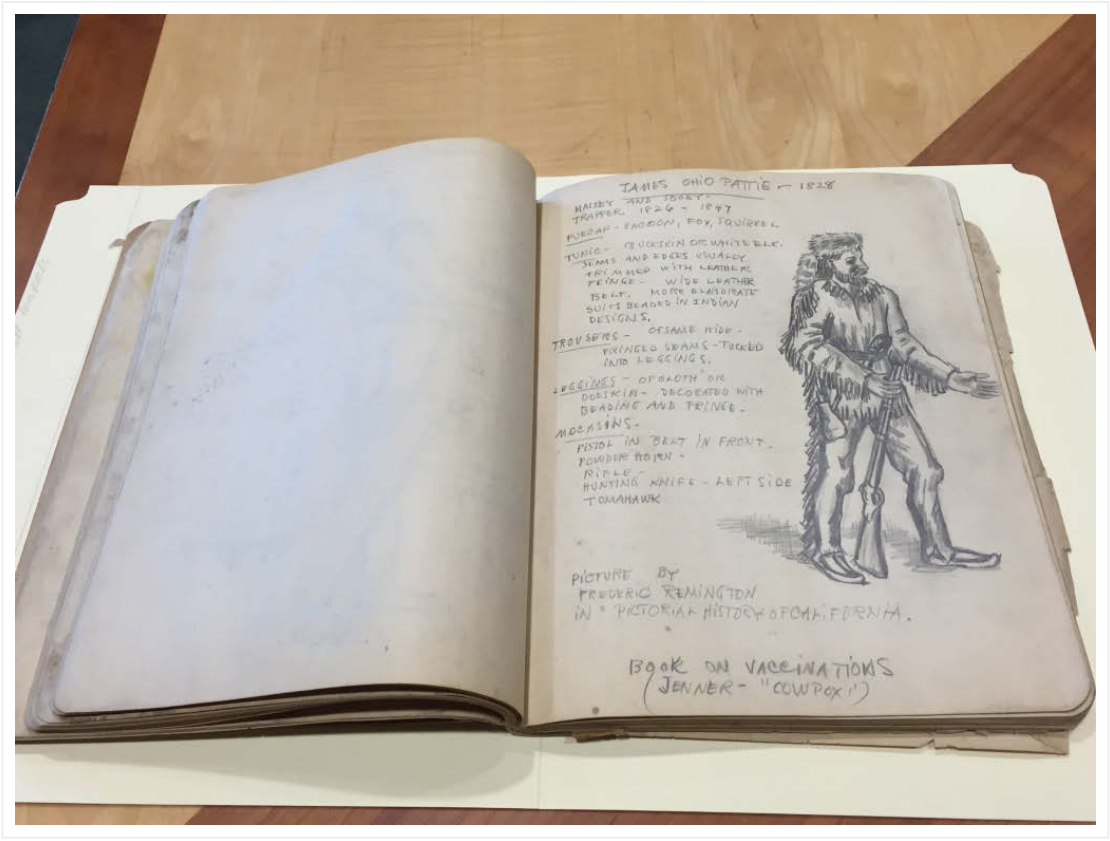


— Drawings of surgical instruments from the UCSF collection for the panel devoted to Don Pedro Prat, surgeon of the Portolá expedition.

— Surgeon Don Pedro Prat treats patient's leg, James Ohio Pattie vaccinates Californians.

One of the sketches portrays fur trader James Ohio Pattie who was captured for illegal trapping in California and earned his release from Mexican imprisonment in San Diego by using the smallpox vaccine to curtail the epidemic spreading among Californians (that story based on the Pattie's "Personal Narrative" was later proved to be inaccurate as it was measles epidemic* that occurred in Alta California at that time).

— Bernard Zakheim at work, 1937



— Drawing of James Ohio Pattie.

Bernard Zakheim and his team interviewed numerous faculty members who are depicted in the panel “Rational Medicine,” including Robert Stone, professor of radiology, Francis S. Smith, pediatrician and dean of the School of Medicine, Karl F. Meyer, director of the Hooper Foundation, anesthesiologist Arthur Guedel and Isabella Perry to name just a few.

— Scaffoldings in the original Cole Hall (that was located at the School of Medicine building) set up while Bernard Zakheim was working on the panel "Rational Medicine."

We are grateful to the Zakheim family and in particular to Nathan Zakheim for donating this unique collection to the University. It will be organized and described in the next few months, selected slides and documents will be digitized and uploaded to the library website.
Are you interested in viewing the murals, but unable to visit San Francisco? Please check these two video recordings from the UCSF archives:
Dr. Robert Schindler (Chair emeritus of the UCSF Department of Otolaryngology) presents a video tour of the murals painted by Bernard Zakheim in Toland Hall at UCSF, 1996:
https://archive.org/details/cum_00001
Toland Hall murals tour by Dr. Chauncey Leake, 1976: https://archive.org/details/cum_000015

We would also like to bring to your attention a manuscript put together by Dr. Sherins chronicling the life story and work of Bernard Zakheim that can be accessed on the Alumni Association website.

* Valle, Rosemary K. "James Ohio Pattie and the 1827-1828 Alta California Measles Epidemic." California Historical Quarterly, Vol. 52, No. 1 (Spring, 1973), pp. 28-36, http://www.jstor.org/stable/25157415.

Posted in **150th Anniversary**, **Acquisitions**, **Alumni**, **Collections**, **History** | Tagged **Bernard Zakheim**, **Chauncey D. Leake**, **History of Medicine in California**, **Phyllis Wrightson**, **Toland Hall**, **WPA Federal Art Project** | **2 Replies**

Exhibit D

J A R E D M. I K E D A

661 San Felipe St., Salinas, CA 93901 phone (831) 422-6292 e-mail: *jmikeda@earthlink.net*

Tuesday, September 08, 2020

Richard Drury
Lozeau Drury, LLP
410 12th Street, Suite 250
Oakland, CA 94607

RE: Comments on Draft Environmental Impact Report for Proposed UCSF Comprehensive Parnassus Heights Plan

Dear Mr. Drury,

At your request, I have reviewed the Draft Environmental Impact Report ("DEIR") for the proposed UCSF Comprehensive Parnassus Heights Plan ("Project")[1]. My review focused on the DEIR's treatment of visual and shadow impacts. My comments are attached as follows:

[1] See appendix for Jared Ikeda qualifications

VISUAL IMPACT

As described in the Comprehensive Parnassus Heights Plan Draft Environmental Impact Report, the proposed plan would provide 2.9 million gross square feet (gsf) of new building space. Currently, there is approximately 3.92 million gsf of building space. With full implementation of the CPHP, the total gross square feet would be approximately 5.97 million, including instruction, research, clinical and support space, housing and structured parking. This is a substantial increase in building area, mass and height, and will undoubtedly create significant visual impacts.

Within this plan a new 16 story hospital is to be constructed at the far east end of the campus and rise to 294 feet in height. As stated in the Draft EIR, this new hospital will be subject to a subsequent project specific environmental review as more details of this project becomes available. However, the Draft EIR states (*pg 4.1-23*) that development under the CPHP would not have a substantial adverse effect on scenic vistas. A significant effect on a scenic vista as defined in the DEIR, is a substantial block or degrade of scenic view from public vantage points. In review of this plan and DEIR, it is apparent that the proposed building plan and particularly the new 16 story hospital would have significant visual impacts. (*see figure 1 and 2*)

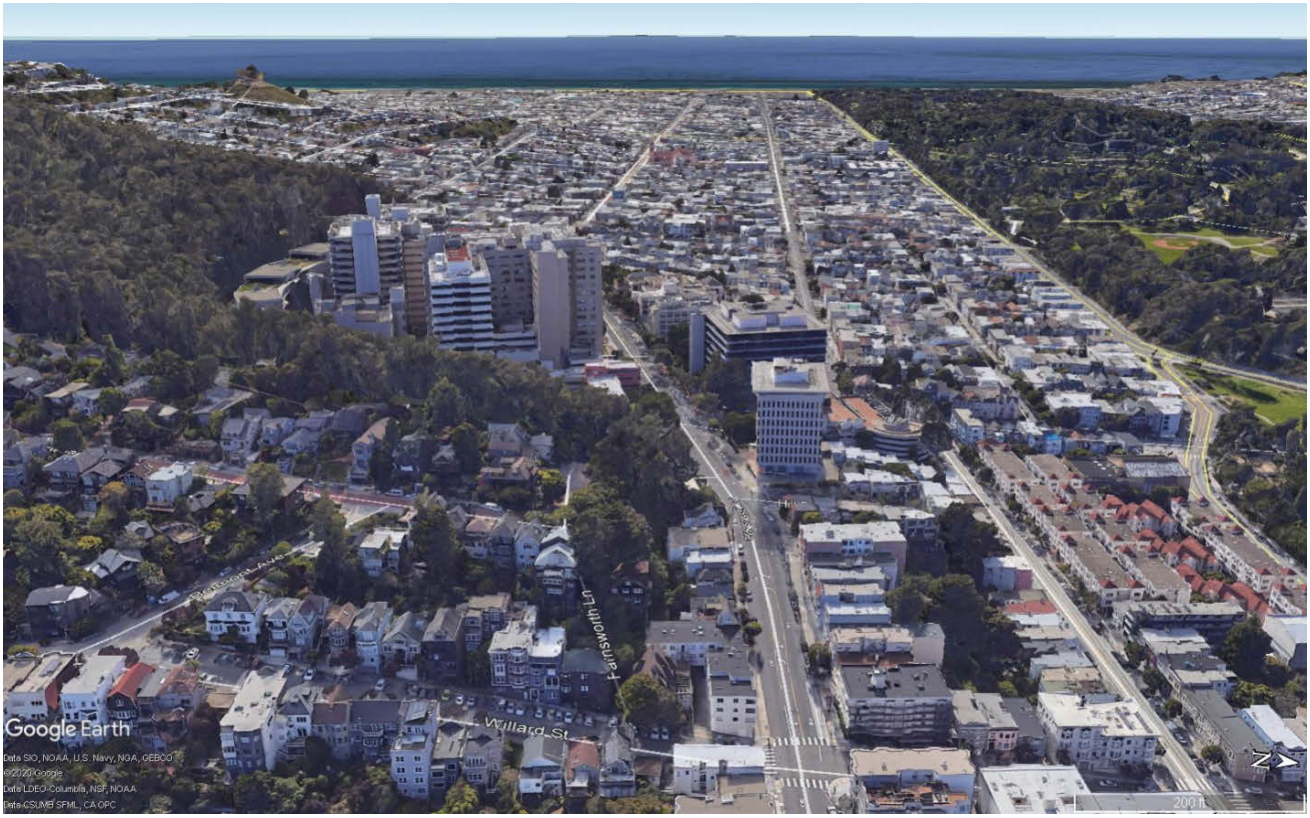


Fig 1 Existing view west from adjacent neighborhood

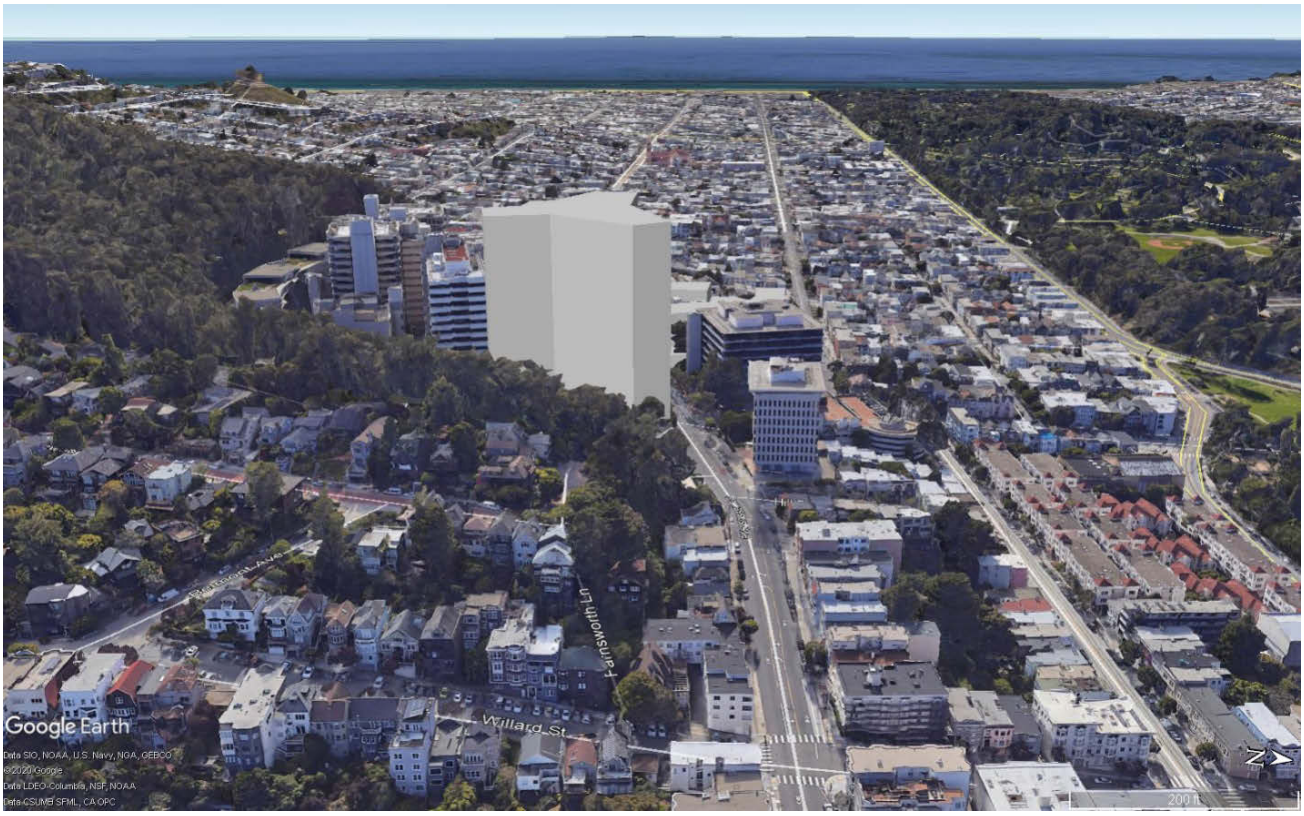


Fig 2 View west with proposed new hospital

By including this new hospital plan within this DEIR and concluding that it would not have a substantial adverse impact on a scenic vista, avoids discussion and possible mitigation measures in subsequent environmental review. This is not the intent of CEQA. Environmental review is a means to avoid or lessen adverse environmental effects at the outset, and by dismissing this issue at this time implies that it will not be address at a project level EIR in the future.

The topography of Mount Sutro and the green of the forested reserve are major elements that visually shape the adjacent neighborhoods as well as the overall city scape as seen from a distance. The views from publically accessible areas in and around the proposed UCSF Parnussus campus to these landmarks are of importance in establishing the quality of the environment here. One particularly significant local view point is the trail head near the intersection of Farnsworth Lane and Edgewood.

Public Trail Head at the end of Farnsworth Lane

The proximity and mass of the proposed new hospital will substantially impact this viewpoint. The 294 ft height and form of the proposed building will be seen and will block views to the west. The existing tree masses in this area and subsequently along the trail leading down, may tend to screen and filter the vistas but, the new proposed hospital will entirely block scenic vistas and dominate the view. This is a significant change to the public view and the inherent quality of the trail head and experience of accessing and walking this trail. This impact to the environmental quality of this publically accessible trail is significant and should be taken into account in considering mitigation measures or alternatives.

Furthermore the entire neighborhoods to the east, and views from streets such as Edgewood and Belmont and Willard and areas to the north of Parnassus Ave such as Hill Point Way will also be visually impacted by the large dominant mass of the new hospital. The size and height of the new hospital will also block views to Mt Sutro and the forest reserve from areas north of Parnassus Ave and Irving Street, and the visual experience of seeing a natural setting of a forested hillside from the local sidewalks and streets will be changed to one of a large urban building.

The visual simulations shown here have been constructed within Google Earth and incorporate scale models of the building masses and heights identified in the DEIR.

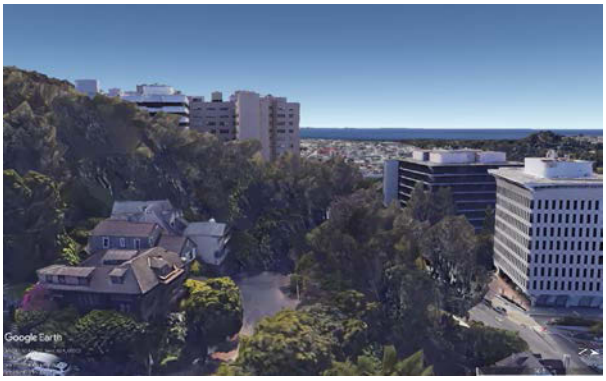


Figure 3 View west from end of Farnsworth

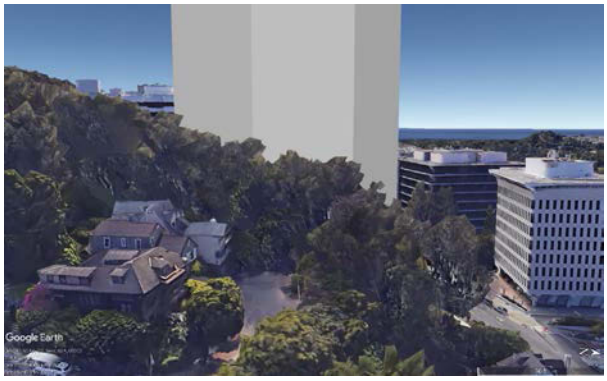


Figure 4 View west from end of Farnsworth with new hospital

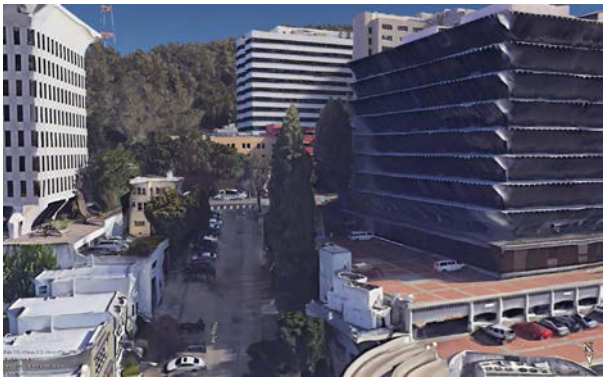


Figure 5 View south from Hill Point Way

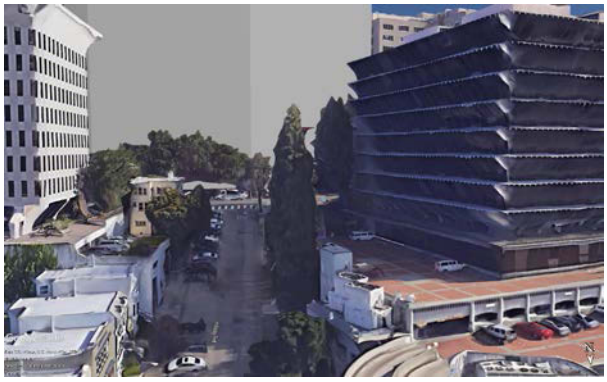


Figure 6 view south from Hill Point Way with new hospital

The views from the trailhead at the end of Farnsworth and adjacent residential neighborhood will become dominated by the mass of the new proposed hospital.

By stating that impacts to publically available scenic vistas are less than significant, the DEIR does not provide any possible mitigation measures or alternatives. This precludes further discussion and possible mitigation measures in future specific project environmental review and essentially allows development of the height and massing of the proposed buildings at this stage of the review process.

Views from other Prominent Vantage Points

The DEIR also identifies several other prominent publically accessible vantage points. These include Tank Hill natural area, Buena Vista Park, and Corona Heights Park. These are all located to the east of the Parnassus Heights campus. The DEIR states that the implementation of the CPHP would not result in a substantial adverse impact to scenic vistas from these publically accessible vantage points. However, in review it is again apparent that the new proposed hospital would change the skyline. (*see figures 7 through 12)*

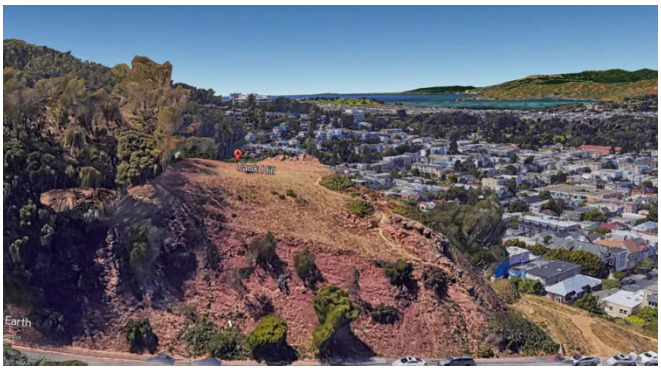


Fig 7 view westward from Tank Hill natural area

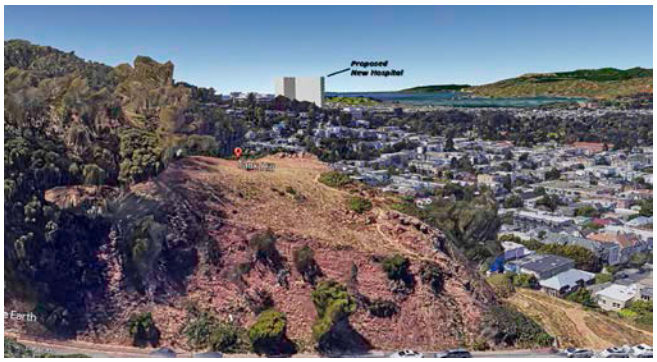


Fig 8 view from Tank Hill natural area with proposed new hospital

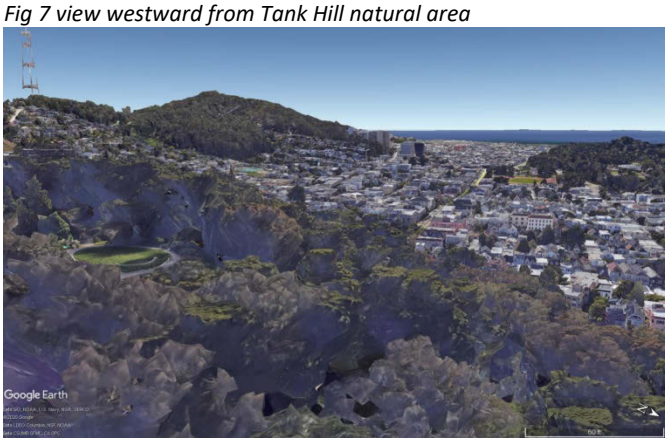


Figure 3 view from Buena Vista Park

Figure 5 view from Buena Vista Park with proposed hospital

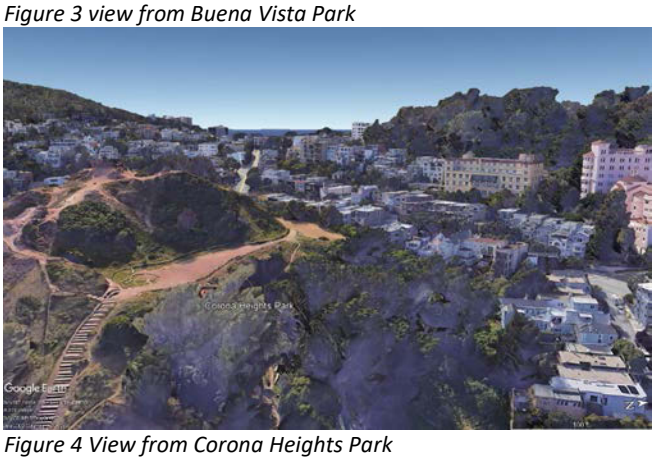


Figure 4 View from Corona Heights Park

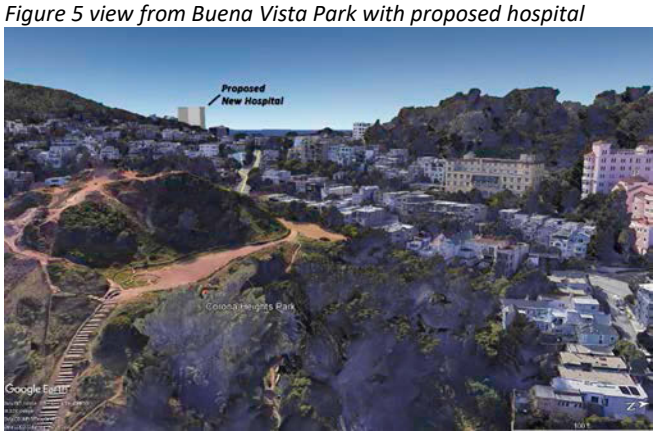


Figure 6 View from Corona Heights Park with proposed hospital

The development of the CPHP will undoubtedly change the visible skyline by addition of the new 294 foot high hospital. This is a noticeable change and should be addressed in the context of the Urban Design

Element of the San Francisco General Plan. The height and mass of the proposed new hospital will be highly visible as a new feature in the skyline from these public parks as well as from various other locations and streets within the surrounding neighborhoods. The Urban Design Element includes a policy to: "*Recognize and protect major views in the city, with particular attention to those of open space and water. Views contribute immeasurably to the quality of the city and to the lives of its residents. Protection should be given to major views whenever it is feasible, with special attention to the characteristic views of open space and water that reflect the natural setting of the city and give a colorful and refreshing contrast to man's development."*

The Urban Design Element of the city's General Plan states that shape, height and bulk of tall building with respect to views from important vantage points around the city should contribute to the beauty of the skyline. While views from private property are not protected in city regulations, the General Plan does protect specific view corridors from the public realm.

It is not clear in the DEIR whether the CPHP has undergone an initial Preliminary Project Assessment by the city's Urban Design Advisory Team (UDAT) to determine consistency with Urban Design Guidelines and other relevant design regulations, the Planning Code, and other policies in the General Plan. Is this review to come at a later environmental review as the project evolves? If so, does this mean that the height and mass of the new hospital is a given if this plan is approved. Since the proposed new hospital will be seen from several publically accessible view points and parks, it seems that such a major feature that will change the visible skyline should be reviewed and assessed by UDAT prior to further project level environmental review.

Overall Impact on Shadow

The DEIR states that implementation of the CPHP would not create new shadows in a manner that would substantially and adversely affect the use and enjoyment of publically accessible open spaces. The DEIR provides description and diagrams of shadow impacts onto various public locations during different seasons and times of day. These public locations include parks and schools which are some distance away and will receive "occasional shadow". The DEIR states that these areas would not be adversely affected and the impact is considered less than significant.

It appears though that certain areas along Parnassus Ave and Irving St. will be subject to "frequent shadows" throughout the year. (*Fan 1 of the Shadow Study Appendix within the DEIR*) Although these are not officially called out as "publically accessible open spaces" needing to be addressed within the city's Urban Design Element guidelines, they are public sidewalk and streets that are frequented by pedestrians and passerbys. These areas currently receive shadows from existing structures but, it can be expected that the increased height of the proposed new hospital and Milberry Terrace and Irving St Gateway projects will further increase the time and frequency of the shadows along Irving St and Parnassus Ave.
Although shadows do not directly affect change in air temperature, they do affect the direct exposure to sun radiation and the resulting feeling of warmth to a person's body. Further, sun radiation can affect the temperature of a surface struck by sunlight and increase that temperature and it's surroundings. The comfort and attractiveness of these particular areas to pedestrians and passerbys may be adversely affected and should be addressed in the EIR. The city's Urban Design Guidelines state that plazas or parks located in the shadows cast by large buildings can be unpleasant for the user and large buildings can be oriented to minimize shadows falling on public or semi-public open space. The guidelines state that the height and mass of tall, closely packed buildings can be shaped to permit sunlight to reach open spaces.

The CPHP does provide new open pedestrian areas within the campus and that is welcomed and appreciated and is a positive. But, discussion of the impact to the existing local areas and circulation patterns should still be noted and made aware to the public. There should be a discussion of how impact to these public areas might be mitigated.

Conclusion

The existing features of Mt Sutro and the Forest Reserve provide form and a sense of place and living within the environment to the UCSF campus and adjacent neighborhoods. The new CPHP with its heights and mass of proposed buildings would alter and change that sense. As noted in the city's Urban Design Element:

"The uses and benefits of the city pattern are many and profound. This pattern is, first of all, bound up in the image and character of the city. To weaken or destroy the pattern would make San Francisco a vastly different place. Second, the city pattern has important psychological effects upon residents of the city. It provides organization and measured relationships that give a sense of place and purpose and reduce the degree of stress in urban life. Outlooks upon a pleasant and varied pattern provide for an extension of individual consciousness and personality, and give a comforting sense of living with the environment."

The visual change from the implementation of the CPHP will be seen from many locations throughout the adjacent neighborhoods as well as other areas and parks within the city including areas of Golden Gate Park. The impact of the shadow patterns to the adjacent neighborhoods will also affect the quality experiences of spaces and pedestrian walkways by the public. These should be considered in the approval process and given recognition in the EIR.

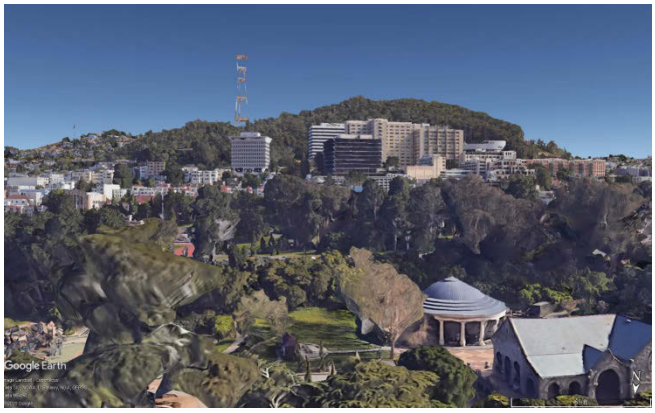


Figure 10 view south from above Golden Gate Park

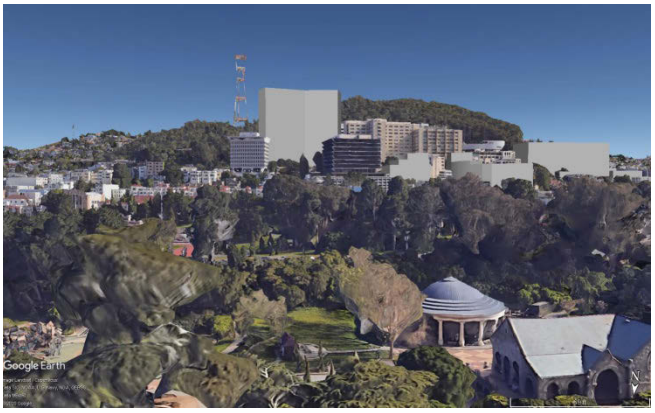


Figure 17 view south from Golden Gate Park with implementation of CPHP

Appendix:

Jared M. Ikeda

Jared Ikeda is a retired Landscape Architect and environmental planner with experience in preparation of land use planning studies, community planning, environmental impact studies, urban site planning, landscape development plans, and recreation planning. He has been involved in a wide range of studies and projects for both public and private sector clients and has participated in and directed all phases of land planning, investigative studies and landscape development. He has served on the board of directors of a major international landscape architectural firm, and Landwatch Monterey County, and served as a lecturer in the Department of Landscape Architecture at California State Polytechnic University, Pomona. His teaching activities focuses upon advanced landscape design and stressed use of computer technology including AutoCAD and ArcMap GIS software. He has prepared a number of visual impact and simulation studies using a variety of computer software including Sketchup and Google Earth. He has been involved in the preparation of the Monterey County General Plan Update from 1999 to 2004 and was responsible for studies and preparation of the Environmental Resource Management Element and the Circulation Element. He also directed consultant work on the Environmental Impact Report.

Project Experience
A selected list of relevant project experience includes:

Granite Chief Wilderness Area – Visual simulation of a proposed gondola
Client: Mountain Area Preservation Foundation

Preparation of a visual simulation of a proposed gondola system connecting the Squaw Valley Resort with Alpine Meadows village. The gondola system crosses an area adjacent to the Granite Chief Wilderness area and impacts the visual quality within the wilderness area.

Donner Summit Development Impact Study

Client: Sierra Watch and the Sierra Club

As part of a consulting team charged with review and comment upon a potential new development of an environmentally sensitive area of the Donner Summit, Mr Ikeda prepared GIS mapping and visual simulation of the proposed plan utilizing Google Earth software.

Dyer Mountain Visual Simulations

Client: Shute Mihaly Weinberger, llc

Mr Ikeda prepared 3 dimensional visual simulations of a proposed forest management plan and ski resort development in Lassen County. The work was utilized to demonstrate the visual impact of the proposed plan.

Colosseum Gold Mine – Visual Impact Analysis
Client: Bureau of Land Management

Prepared a visual impact analysis and land restoration plan for the Colosseum Gold Mine, an open pit gold mine near the California/Nevada border. The project utilized computer generated visual simulations.

Professional Experience
Principal: Ikeda Consulting, 2005 to Present
Monterey County Redevelopment Agency, 2004-2005
Senior Admin Analyst: County of Monterey, Environmental Resource Policy, 1999-2004
Lecturer: Cal Poly Pomona, Dept of Landscape Architecture 1997-1999
Vice-President/Officer-in-Charge EDAW Inc., Irvine Office: 1980 to 1987

EDAW, Inc. 1969 to 1989

Education

Bachelor of Science in Environmental Design, California State Polytechnic University, Pomona, 1968.

Honors

Best Comprehensive Plan, Orange Co. Section, American Planning Association, San Juan Capistrano Master Open Space Plan, 1992
Distinguished Alumnus Award, 1983, School of Environmental Design, California State Polytechnic University, Pomona.
Merit Award, American Society of Landscape Architects, Santa Ana River Open Space Study, 1973

Lectures & Publications

Mr. Ikeda has served as a guest lecturer at UCLA, UC Irvine, and Cal Poly Pomona. Mr. Ikeda has also served as Chairman of a panel on Computers and Landscape Architecture for the Southern California Chapter of the American Society of Landscape Architecture.
Contributor to *"Design with Digital Tools"* McGraw Hill, 2000

Exhibit E

Shawn Smallwood, PhD
3108 Finch Street
Davis, CA 95616

Diane Wong
UCSF Real Estate - Campus Planning
654 Minnesota Street
San Francisco, CA 94143-0286

1 September 2020

RE: Comprehensive Parnassus Heights Plan

Dear Ms. Wong,

I write to comment on UCSF's (2020) Environmental Impact Report ("EIR") prepared for the Parnassus Heights Plan, which I understand would add 2.04 million square feet of new floor space to 168 acres of land between the Parnassus Campus, Aldea Housing, and Mount Sutro Open Space Reserve. The buildings would vary in height, up to 294 feet. Given trends in the use of structural glass on the façades of Bay Area multi-story buildings, and the trend in using extensive glass on University buildings throughout the USA, I anticipate the buildings of the proposed project would add extensive new glass windows that would threaten birds with collision mortality. I write to comment on this and other potential project impacts to special-status species of vertebrate wildlife.

My qualifications for preparing expert comments are the following. I hold a Ph.D. degree in Ecology from University of California at Davis, where I subsequently worked for four years as a post-graduate researcher in the Department of Agronomy and Range Sciences. My research has been on animal density and distribution, habitat selection, habitat restoration, interactions between wildlife and human infrastructure and activities, and conservation of rare and endangered species. I perform research on wildlife mortality caused by wind turbines, electric distribution lines, agricultural practices, and road traffic, among other human activities and structures. I authored numerous papers on special-status species issues. I served as Chair of the Conservation Affairs Committee for The Wildlife Society – Western Section. I am a member of The Wildlife Society and the Raptor Research Foundation, and I've been a part-time lecturer at California State University, Sacramento. I was Associate Editor of wildlife biology's premier scientific journal, The Journal of Wildlife Management, as well as of Biological Conservation, and I was on the Editorial Board of Environmental Management. I have performed wildlife surveys in California for thirty-three years, including at many proposed project sites. My CV is attached.

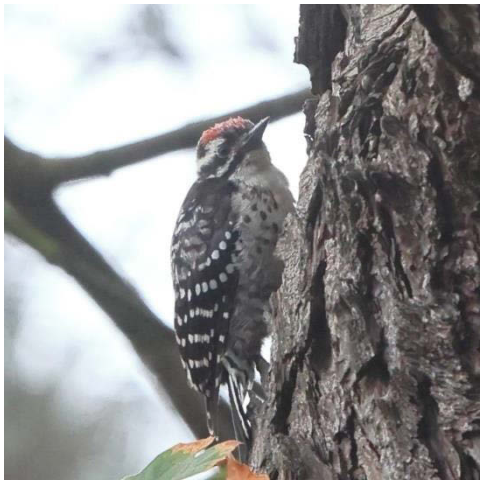
SITE VISIT

I visited Aldea Housing, Mount Sutro Open Space Reserve, and the Parnassus Campus for 3 hours and 30 minutes, starting at 08:17 hours on 20 August 2020. The Marine Layer dominated the sky until the last 90 minutes or so. I surveyed on foot, using binoculars to scan for wildlife.

Campus buildings occur immediately north of the steeply sloped Mount Sutro (Figure 1) and the densely forested environment of Mount Sutro Open Space Reserve (Figure 2). Aldea Housing is likewise tucked into the forested slopes of Mount Sutro, but on the southeast aspect.

Figures 1 and 2. A building proposed for replacement (left) looms near the densely forested Mount Sutro Open Space Reserve (right).

Not surprisingly, given its forestation and the fact that Mount Sutro Open Space Reserve is one of the last remaining substantial patches of open space in San Francisco, I saw and heard many birds during my visit. Among other species, I detected Anna's hummingbirds (Figure 3), Nuttall's woodpecker (Figure 4), pygmy nuthatches (Figure 5), common ravens (Figure 6), Wilson's warbler (Figure 7), song sparrows (Figure 8), dark-eyed juncos (Figure 9), and house finches (Figure 10). Many of the birds I detected were fledglings accompanied by their parents, thus proving the site is productive for birds (Figure 11). Foraging on the site was abundantly evident (Figure 12). In all, I detected at least 23 species of vertebrate wildlife (Table 1), including 5 special-status species and only 2 non-native species. Both of the non-native species were within built-over areas, including a rock pigeon on the Parnassus Campus and house sparrows at Aldea Housing.

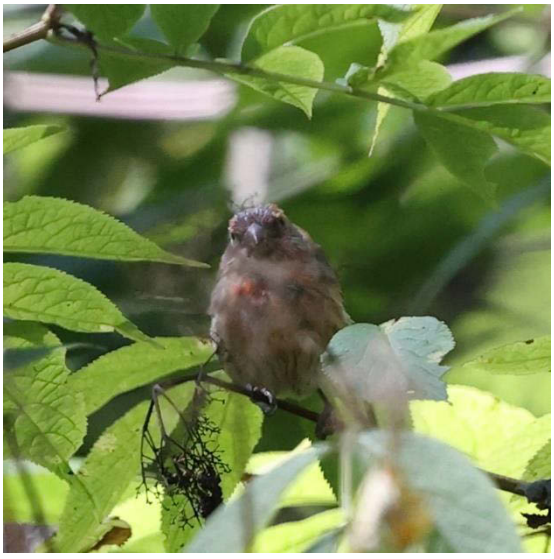


Figures 3 and 4. Anna's hummingbird (left) and Nuttall's woodpecker (right) on the project site, 20 August 2020.

Figures 5 and 6. Pygmy nuthatch (left) and common raven (right) on the project site, 20 August 2020.


Figures 7 and 8. Wilson's warbler (left) and song sparrow (right) on the project site, 20 August 2020.


Figures 9 and 10. Dark-eyed junco (left) and house finch (right) on the project site, 20 August 2020.



Figures 11 and 12. A fledgling house finch (left) and a song sparrow with worm (right).

Most of the species of birds I detected had also recently been detected by Golden Gate Audubon Society ("GGAS") (2020), who tallied 47 species of birds on Mount Sutro Open Space Reserve in about 54 hours of surveys between 16 March and 29 December 2019. I detected 5 bird species that GGAS (2020) did not, including peregrine falcon, Nuttall's woodpecker, acorn woodpecker, house sparrow, and American goldfinch. However, the peregrine falcon I detected was atop Sutro Tower, which might not have been detectable from the stations used by GGAS, or alternatively GGAS might have declined to include detections on Sutro Tower due to its location outside the Reserve. The house sparrows I detected were at Aldea Housing, which is another area outside GGAS's survey space. Some of the species detected by GGAS and not by me, and some of those I detected but GGAS did not, could have been represented by birds using the Reserve as stop-over habitat. If the Reserve was surveyed over several years, the number of bird species would likely far exceed the 52 species GGAS and I detected altogether. eBird records further indicate a long list of species use Mount Sutro Open Space Reserve, the Parnassus Campus and Aldea Housing.

GGAS (2020) confirmed breeding by 11 species, and suspected breeding by another 5 species. One of the species suspected of breeding was red-shouldered hawk, which I observed reacting defensively to the arrival of a red-tailed hawk. The red-shouldered hawk's reaction, including sustained calling each time the red-tailed hawk circled close to the red-shouldered hawk's tree, was typical of a breeding member of this species defending its nest. I concur with GGAS that Mount Sutro Open Space Reserve is an important breeding area for birds.

GGAS (2020) also tallied 136 observations of birds foraging on the Reserve, or about 2.5 foraging events per hour of survey. During my site visit I witnessed foraging at a minimum 1.4 events per hour. I was not specifically attempting to record foraging

events, so I did not record how many members of a flock of pygmy nuthatches I observed peel back bark for a food reward; I simply counted their foraging as one event. I also saw foraging by Wilson's warbler, Nuttall's woodpecker, song sparrow, and common raven. The Reserve is obviously an important foraging area for birds.

The western gray squirrel I saw (Table 1) was the only record of this species I could find for Mount Sutro Open Space Reserve. At the time of my observation, I had no doubt of my species identification, but I was unable to capture a photo. Another sighting of western gray squirrel was reported to iNaturalist in 2020 -- along with a photo -- for a site just northwest of the UCSF Parnassus Campus at 10th Ave. and Irving St.

Table 1. Species of wildlife I observed during my site visit on 20 August 2020.

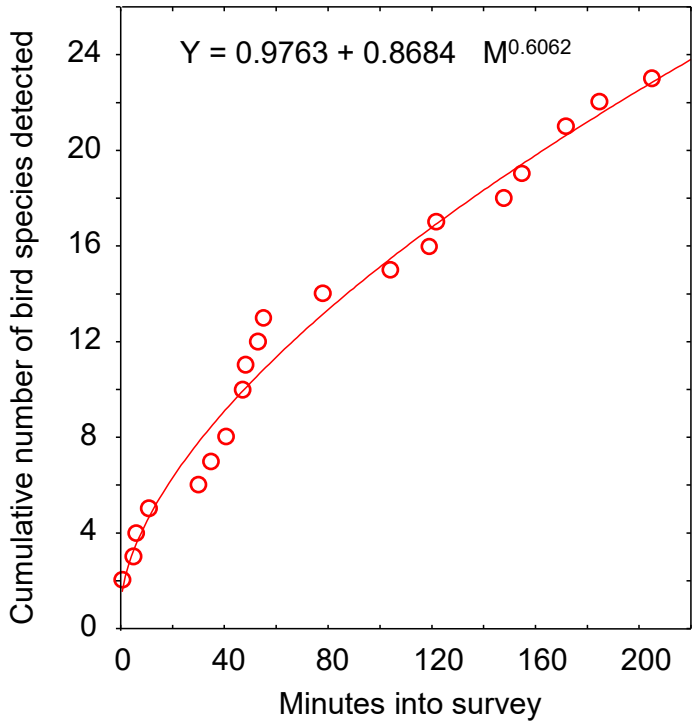
Species	*Scientific name*	**Status**[1]	**GGAS 2019**
Red-tailed hawk	*Buteo jamaicensis*	FGC 3503.5	Yes
Red-shouldered hawk	*Buteo lineatus*	FGC 3503.5	Yes
Peregrine falcon	*Falco peregrinus*	CE, CFP, FGC 3503.5	No
Rock pigeon	*Columba livia*	Non-native	Yes
Anna's hummingbird	*Calypte anna*		Yes
Nuttall's woodpecker	*Picoides nuttallii*	BCC	No
Acorn woodpecker	*Melanerpes formicivorus*		No
Steller's jay	*Cyanocitta stelleri*		Yes
California scrub-jay	*Aphelocoma californica*		Yes
Common raven	*Corvus corax*		Yes
Chestnut-backed chickadee	*Poecile rufescens*		Yes
Pygmy nuthatch	*Sitta pygmaea*		Yes
Pacific wren	*Thryomanes pacificus*		Yes
Ruby-crowned kinglet	*Regulus calendula*		Yes
American robin	*Turdus migratorius*		Yes
Yellow warbler	*Setophaga petechia*	SSC2, BCC	Yes
Wilson's warbler	*Wilsonia pusilla*		Yes
House sparrow	*Passer domesticus*	Non-native	No
Lincoln's sparrow	*Melospiza lincolnii*		No
Song sparrow	*Melospiza melodia*		Yes
Dark-eyed junco	*Junco hyemalis*		Yes
House finch	*Carpodacus mexicanus*		Yes
American goldfinch	*Carduelis tristis*		No
Western gray squirrel	*Sciurus griseus*		

[1] BCC = US Fish and Wildlife Serv ice's Birds of Conservation Concern, CE = California Endangered, CFP = California Fully Protected, SSC2 = California Species of Special Concern priority level 2, FGC 3503.5 = California Department of Fish and Wildlife Code -- Birds of prey.

The 23 species of birds I detected represented a fraction of those I would have detected had I been able to devote more time to the effort (Figure 13). The model in Figure 13 predicts I would have detected 47 species – equal to the number detected by GGAS – in

11 hours and 40 minutes. It also predicts I would have detected 117 species of birds had I surveyed as long as GGAS. The difference in detection rates did not result from any differences in skill levels, but rather in method. GGAS applied standard point count methods, which are suited for comparing species detections among locations or time periods; it is a method I often use. The survey method I implemented at Mount Sutro was a more aggressive move-and-encounter approach. Had GGAS implemented this method, they would have detected well over 100 species of birds.

Figure 13. Cumulative number of bird species detected as a power function of the number of minutes devoted to the survey. The model explained 98% of the variation, with a root mean square error of 17.71. Had I been able to commit more time to the survey, I am confident a different model would have better fit the resulting data – a model more expressive of an asymptote.



BIOLOGICAL IMPACTS ASSESSMENT

The project would mostly redevelop areas that are already built-up, including new buildings on campus and larger, taller buildings at Aldea Housing. To facilitate the tallest of the proposed buildings on Campus, the project would remove 0.15 acres from the Open Space Reserve, but would re-designate 0.4 acres to Open Space Reserve from another nearby area designated as Support. This other area designated as Support, however, is already forested and otherwise indistinguishable from the forested landscape of the surrounding areas of Mount Sutro Open Space Reserve. From the perspective of wildlife, the swap in land designations results in a 0.15-acre habitat loss.

Much more substantial habitat impacts than mere acreage loss would result from the heights, extent, and structural attributes of the proposed new buildings. In my experience, erecting tall structures into the aerohabitat of volant wildlife results in collision mortality and interference with wildlife movement. New, tall structures erected at the proposed locations would intercept many birds attempting to fly to or away from Mount Sutro Open Space Reserve. Most migratory or dispersing birds

attempting to stop-over at the habitat island that Mount Sutro represents in San Francisco, and most birds leaving Mount Sutro to continue their migration or dispersal, would expend extra energy – energy needed for long-distance flights – negotiating their way around the buildings, but some would collide with the buildings after becoming disoriented or misled by the buildings' nighttime lights and by transparent and reflective glass windows. Proposed mitigation measures should prevent numerous collisions (more on this later), but they cannot prevent enough of them to lessen the project's impacts to less-than-significant.

An example of what would be in store for birds encountering buildings of the new project was presented in San Francisco's bird-safe building standards (San Francisco Planning Department 2011). On page 15 is a photo of New York City's most dangerous building to birds, which is the Morgan Mail Building located next to a landscaped park. Though the Morgan Mail Building is not particularly tall for Manhattan, nor does it include more window space than other buildings, its location next to the park is what makes it more dangerous to birds than other buildings. The locations of the proposed new buildings on the Parnassus Campus and Aldea Housing would be proximal to a much more substantial habitat area than the small park next to the Morgan Mail Building in Manhattan.

Another example can be found practically next door to the Parnassus Campus, where a bird-window collision study was performed recently at California Academy of Sciences ("CAS") (Kahle et al. 2016). Like the Morgan Mail Building, CAS is located next to landscaped park – Golden Gate Park. Its fatalities were represented by 37 species. Its pre-mitigation bird-window collision rate of 0.0654 fatalities per m^2 of glass per year averaged close to the national average (more on this below). This rate translates to 62 bird-window collision fatalities per year before attempting to adjust the estimate for the proportion of fatalities not found by searchers due searcher error and removals of carcasses by scavengers. Assuming the scavenging community functions at Golden Gate Park as effectively as it does in the Altamont Pass Wind Resource Area, where carcass detection rates were carefully measured, and assuming the fatality searchers were equally skilled, then the 62 bird-window collisions per year estimated for CAS would be adjusted to 835 (95% CI: 429-3,689) bird-window collisions per year.[1] A principal reason for the large difference between adjusted and unadjusted fatality rates at CAS was the preponderance of small-bodied birds among window casualties. The species most often found as fatalities was Anna's hummingbird, including 131 carcasses. Averaging about 4.5 g, Anna's hummingbird carcasses can be picked up and removed by a much larger array of vertebrate scavengers than could a 322-g rock pigeon. A feral cat could consume 25 Anna's hummingbirds per day, but only about a third of a rock

[1] The fatality search interval at CAS was the same as that of half the wind turbines in the Vasco Winds Energy Project in Contra Costa County (Brown et al. 2016). To derive an overall detection rate for weekly search intervals, I selected detection trial carcasses that had been placed on open ground, which I assumed best represented the ground searched for fatalities at CAS. I fit a model to overall carcass detection rates as a function of body mass, and applied the model predictions to the numbers of fatalities of each species found as window collision victims at CAS (see Smallwood et al. 2018 for methodological details).

pigeon. Common ravens likely remove most of the carcasses of small birds around CAS, and likely do so without leaving any trace evidence of the fatality ever having happened.

Although relative abundance of bird species serves as a poor predictor of bird-window collision fatalities (Figure 14), a bird species must use the airspace occupied by a building before the species can become a collision victim of that building. Therefore, learning which species occur in the project area is an important first step in analyzing potential impacts of bird-window collisions. Learning which special-status species occur in the project area is even more important. Learning which species are known to be vulnerable to windows would also inform an analysis of potential project impacts. Table 2 identifies special-status species documented in the project area, as well as species detected as window collision victims at CAS or at other buildings.

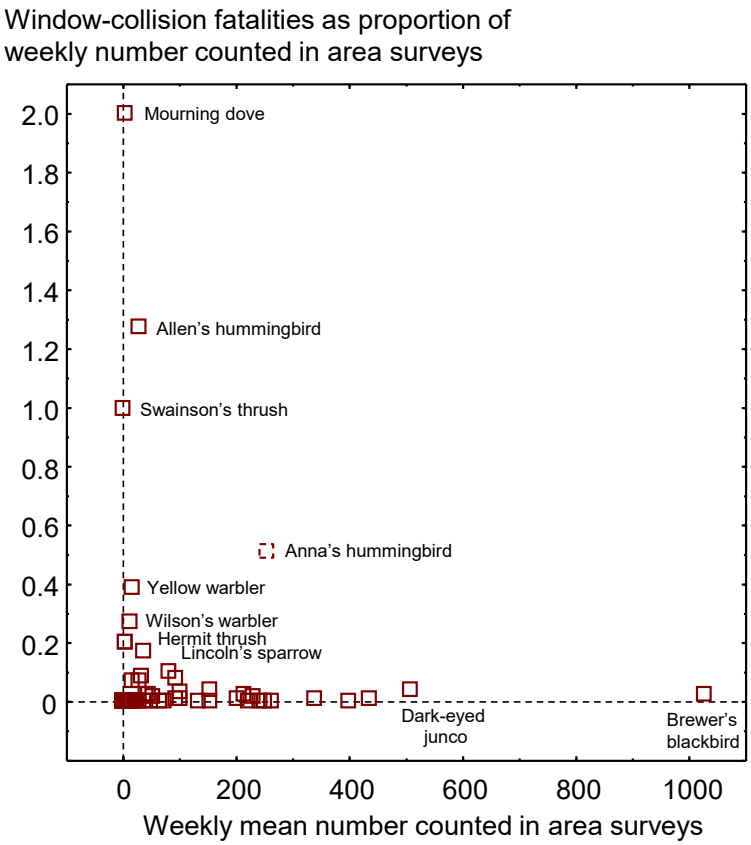


Figure 14. The ratio of window-collision fatalities to relative abundance related inversely to relative abundance, where some of the least abundant species contributed disproportionately to window-collision fatalities and some of the most abundant species contributed least to fatalities (data from Kahle et al. 2016). Data at the 0-intercept represent bird species either recorded as fatalities but never seen in relative abundance surveys or counted in relative abundance surveys and never recorded as fatalities.

The EIR inadequately analyzes potential impacts to wildlife. Of the 40 special-status species of birds documented by eBird, GGAS, and myself, the EIR addresses only 6 (15%) of them. Of the 6 bird species that are addressed, the EIR dismisses the likelihood of occurrence of 2 of them: northern harrier and San Francisco common yellowthroat, both of which have been seen on site (Table 2). The EIR assigns low likelihood of occurrence to another 3 of the 6 species it addresses, even though all 3 have been documented in the area (Table 2). The EIR assigns only moderate occurrence likelihood to peregrine falcon, a species I saw looking down at the project site from Sutro Tower. Furthermore, in a report prepared for UC San Francisco, GGAS reported having seen 7

special-status species of birds that are not addressed in the EIR (Table 2). I also note that the EIR addresses only 5 of the 8 special-status species of mammals I consider likely to occur at the project site at one time or another (Table 3).

The EIR argues that most special-status species of wildlife in San Francisco would not occur on the project site due to specialized habitat requirements which are lacking at the project site. The EIR summarizes habitat needs of those few species it addresses, but for each species it describes an artificially narrow portion of the environment that defies reality. For example, it says short-eared owls require marsh or meadow habitat, which is not present at the project site. I have certainly encountered short-eared owls in marsh and meadow, but I have also observed them in annual grassland and, more relevant to this project, in oak woodland. The short-eared owl I encountered in oak woodland might have been using the woodland for cover or perhaps it was moving through the area on migration or dispersal. That short-eared owls similarly use Mount Sutro Open Space Reserve is suggested by eBird, which shows sightings very close to the project site.

In another example, the EIR commits northern harrier to marsh. Most of the northern harriers I have recorded have been on annual grassland, but I have seen them in various environments, including over urban areas. Northern harrier has been documented on the project site (Table 2).

The EIR also argues that the project site lacks nesting habitat for various special-status species. However, the implied distinction between nesting and foraging habitat, or between nesting and stopover habitat, is more contrivance than real, because no animals can successfully breed without also successfully foraging or migrating. To breed successfully, birds must find sufficient forage and they must survive migration and non-breeding seasons by finding suitable stopover habitat and all the other habitat elements needed. Arguing that the habitat value of a place is somehow lesser because it lacks nest substrate is fallacious where the species can satisfy other needs that are critical for successful nesting elsewhere or later in the year.

Of the 40 special-status species of birds that have been documented at or near the project site, 16 (40%) have also been documented as window collision victims. Five of these species were documented as window collision victims at CAS, located very close to the project site. Of these species, I estimated Allen's hummingbird to have died from window collision at a rate of 179 per year until any mitigation measures were implemented. Prior to any mitigation, CAS windows killed an estimated 223 members of special-status species, or 27% of all birds.

Table 2. eBird (https://eBird.org) reports of special-status species near the project site and species reported as window-collision victims at the nearby California Academy of Sciences (CAS) buildings (Kahle et al. 2016).

Species	Scientific name	Status[1]	Occurrences			Number counted at CAS study		Known window deaths
			EIR like-lihood	GGAS 2020	eBird	As window deaths	Alive in survey plots	
American white pelican	*Pelacanus erythrorhynchos*	SSC1			Nearby			
Brown pelican	*Pelecanus occidentalis californicus*	CFP			Nearby			
Double-crested cormorant	*Phalacrocorax auratus*	TWL			Nearby			
California gull	*Larus californicus*	TWL			On site			
Caspian tern	*Hydroprogne caspia*	TWL			On site			
Elegant tern	*Thalasseus elegans*	BCC			Nearby			
Osprey	*Pandion haliaetus*	TWL, FGC 3503.5			On site			
Red-tailed hawk	*Buteo jamaicensis*	FGC 3503.5		Yes	On site		1	Yes
Ferruginous hawk	*Buteo regalis*	TWL, FGC 3503.5			Nearby			
Sswainson's hawk	*Buteo swainsoni*	CT, BCC, FGC 3503.5			Nearby			
Red-shouldered hawk	*Buteo lineatus*	FGC 3503.5		Yes	On site		1	Yes
Rough-legged hawk		FGC 3503.5			Nearby			
Sharp-shinned hawk	*Accipiter striatus*	FGC 3503.5, TWL			On site			Yes
Cooper's hawk	*Accipiter cooperi*	FGC 3503.5, TWL		Yes	On site			Yes
Northern harrier	*Circus cyaneus*	SSC3, FGC 3503.5	None		On site			
White-tailed kite	*Elanus leucurus*	CFP, TWL, FGC 3503.5	Low		Nearby			
American kestrel	*Falco sparverius*	FGC 3503.5			Nearby			Yes
Merlin	*Falco columbarius*	FGC 3503.5, TWL			On site			Yes
Peregrine falcon	*Falco peregrinus*	CFP, BCC	Moderate		On site			Yes
Mourning dove	*Zenaida macroura*			Yes	On site	6	3	Yes
Great-horned owl	*Bubo virginianus*	FGC 3503.5			On site		1	

Species	Scientific name	Status[1]	Occurrences			Number counted at CAS study		Known window deaths
			EIR like-lihood	GGAS 2020	eBird	As window deaths	Alive in survey plots	
Long-eared owl	*Asio otus*	SSC3, FGC 3503.5			Nearby			
Short-eared owl	*Asio flammeus*	SSC3, FGC 3503.5	Low		Very close			
Western screech-owl	*Megascops kennicotti*	FGC 3503.5			Nearby			
Barn owl	*Tyto alba*	FGC 3503.5			On site			
Vaux's swift	*Chaetura vauxi*	SCC2			Nearby			
Anna's hummingbird	*Calypte anna*			Yes	On site	131	256	Yes
Allen's hummingbird	*Selasphorus sasin*	BCC		Yes	On site	37	29	Yes
Costa's hummingbird	*Calypte costae*	BCC			Nearby	1	0	Yes
Rufous hummingbird	*Selasphorus rufus*	BCC			On site	4	0	Yes
Nuttall's woodpecker	*Picoides nuttallii*	BCC			On site		13	
Pacific-slope flycatcher	*Empidonax difficilis*			Yes	On site	1	5	Yes
Olive-sided flycatcher	*Contopus cooperi*	SSC2		Yes	On site			
Willow flycatcher	*Empidonax traillii*	CE, BCC		Yes	Nearby			
Black phoebe	*Sayornis nigricans*			Yes	On site	3	34	Yes
Oak titmouse	*Baeolophus inornatus*	BCC			Nearby			Yes
Chestnut-backed chickadee	*Poecile rufescens*			Yes	On site	1	203	Yes
Bushtit	*Psaltriparus minimus*			Yes	On site	1	399	Yes
Brown creeper	*Certhia americana*			Yes	On site	1	52	Yes
Pygmy nuthatch	*Sitta pygmaea*			Yes	On site	1	242	Yes
Loggerhead shrike	*Lanius ludovicianus*	BCC, SSC2			Regional			
Purple martin	*Progne subis*	SSC2			Nearby			Yes
Bank swallow	*Riparia riparia*	CT	Low		Nearby			Yes
Swainson's thrush	*Catharus ustulatus*			Yes	On site	1	1	Yes
Hermit thrush	*Catharus guttatus*			Yes	On site	8	82	Yes
American robin	*Turdus vulvaris*				On site	3	389	Yes

Species	Scientific name	Status[1]	Occurrences			Number counted at CAS study		Known window deaths
			EIR like-lihood	GGAS 2020	eBird	As window deaths	Alive in survey plots	
Warbling vireo	*Vireo gilvus*				On site	1	5	Yes
Yellow-rumped warbler	*Setophaga coronata*			Yes	On site	7	92	Yes
Orange-crowned warbler	*Oreothlypis celata*			Yes	On site	2	29	Yes
Townsend's warbler	*Setophaga townsendi*			Yes	On site	3	101	Yes
Wilson's warbler	*Cardellina pusilla*			Yes	On site	3	11	Yes
Yellow warbler	*Setophaga petechia*	SSC2, BCC		Yes	On site	7	18	Yes
San Francisco common yellowthroat	*Geothlypis trichas sinuosa*	SSC3, BCC	None		Nearby	3	0	Yes
Yellow-breasted chat	*Icteria virens*	SSC3			Nearby			Yes
Song sparrow	*Melospiza melodia*			Yes	On site	5	435	Yes
Golden-crowned sparrow	*Zonotrichia atricapilla*			Yes	On site	3	230	Yes
White-crowned sparrow	*Zonotrichia leucophrys*			Yes	On site	1	249	Yes
Savannah sparrow	*Passerculus sandwichensis*				On site	2	0	Yes
Lincoln's sparrow	*Melospiza lincolnii*				On site	3	35	Yes
Fox sparrow	*Passerella iliaca*			Yes	On site	6	152	Yes
Dark-eyed junco	*Junco hyemalis*			Yes	On site	22	510	Yes
California towhee	*Melozone crissalis*			Yes	On site	1	92	Yes
Brown-headed cowbird	*Molothrus ater*				On site	1	39	Yes
Red-winged blackbird	*Agelaius phoeniceus*				On site	1	261	Yes
Brewer's blackbird	*Euphagus cyanocephalus*				On site	25	1027	Yes

Species	Scientific name	Status[1]	Occurrences			Number counted at CAS study		Known window deaths
			EIR like-lihood	GGAS 2020	eBird	As window deaths	Alive in survey plots	
Tricolored blackbird	*Agelaius tricolor*	CT, BCC			Nearby		15	
House finch	*Haemorhous mexicanus*			Yes	On site	5	213	Yes
Lesser goldfinch	*Spinus psaltria*			Yes	On site	1	44	Yes
Lawrence's goldfinch	*Carduelis lawrencei*	BCC			Nearby			

[1] Listed as BCC = U.S. Fish and Wildlife Service Bird Species of Conservation Concern, CT or CE = California threatened or endangered, CFP = California Fully Protected (CDFG Code 3511), FGC 3503.5 = California Fish and Game Code 3503.5 -- Birds of prey, and SSC1, SSC2 and SSC3 = California Bird Species of Special Concern priorities 1, 2 and 3, respectively, and TWL = Taxa to Watch List (Shuford and Gardali 2008).

Table 3. Special-status species of mammals potentially occurring at the project site, and whether and how assessed in the EIR.

Species	**Scientific name**	**Status**[1]	**EIR occurrence likelihood**	**Smallwood likelihod**
Pallid bat	*Antrozous pallidus*	SSC, WBWG high	Low	Possible
Townsend's big-eared bat	*Corynorhinus townsendii*	SSC, WBWG high	Low	Probable
Hoary bat	*Lasiurus cinereus*	WBWG moderate	Moderate	Probable
Western red bat	*Lasiurus blossevillii*	SSC, WBWG high	Moderate	Probable
Fringed myotis	*Myotis thysanodes*	WBWG high		Possible
Long-eared myotis	*Myotis evotis*	WBWG moderate		Possible
Small-footed myotis	*Myotis cililabrum*	WBWG		Possible
San Francisco dusky-footed woodrat	*Neotoma fuscipes annectens*	SSC	Low	Probable

[1] SSC = California Bird Species of Special Concern, WBWG = priority listing by Western Bat Working Group

Project Impact Prediction from Bird-Window Collisions

An empirical basis for robustly predicting bird-window collision mortality exists, not only in the research that was done at the nearby CAS, but also among all of the studies performed across North America. I reviewed reports of avian fatality monitoring among building structures in a wide variety of environmental settings, types of structures, and types of glass on structural façades. Specifically, I reviewed reports of bird collision monitoring at 181 buildings and façades for which bird collisions per m^2 of glass per year could be calculated and averaged (Johnson and Hudson 1976, O'Connell 2001, Somerlot 2003, Hager et al. 2008, Borden et al. 2010, Hager et al. 2013, Porter and Huang 2015, Parkins et al. 2015, Kahle et al. 2016, Ocampo-Peñuela et al. 2016, Sabo et al. 2016, Barton et al. 2017, Schneider et al. 2018). These study results averaged 0.077 bird deaths per m^2 of glass per year (95% CI: 0.04-0.11), before any adjustments were attempted to account for the proportion of fatalities not found due to searcher error and carcass removal by scavengers. This average and its 95% confidence interval provide a robust basis for predicting minimum fatality rates at a proposed new project.

A major shortfall of the EIR is its omission of any details about the design of proposed buildings, including the amount of glass, types of glass, and structural contexts of glass. The only detail I have to work with is the intended 2.04 million square feet of floor space. I applied this figure to an average rate (and 95% CI) of glass extents on 12 recently proposed buildings intended for use as offices hotels and mixed-use in California. The mean was 0.0328 m^2 of glass façade per ft^2 of floor space (95% CI: 0.0052-0.0603). To this extent of glass, I multiplied 2.04 million ft^2 of project floorspace to get 66,838 m^2 of glass façade (95% CI: 8,783-117,327 m^2). However, in my experience, both hospital and university buildings tend to use more glass on their façades (Figure 14). Additionally, recent advances in structural glass engineering have contributed to a proliferation of glass windows on building façades. This proliferation is readily observable in newer buildings, and it is represented by a worldwide 20% increase in glass manufacturing for building construction since 2016. Increasing window-to-wall ratios and glass façades have become popular for multiple reasons, including a growing demand for 'daylighting.' To account for these trends, I increased my estimated extent of glass composing façades of the proejct's buildings by anotehr 20%, to 80,206 m^2 of glass façade (95% CI: 10,594-140,792 m^2).

To the above prediction of the mean amount of glass composing the project's building façades, I multiplied the mean rate of bird collisions per m^2 of glass façade to predict **6,176 bird deaths per year (95% CI: 3,208-8,823)** at the Parnassus Campus. The 100-year toll from this average annual fatality rate would be **617,586 bird deaths (95% CI: 320,824-882,266)**, which would continue until the buildings are either renovated to reduce bird collisions or they come down. The vast majority of these deaths would be of birds newly protected under Fish and Game Code section 3513 (see above). If the project moves forward as proposed, and annually kills more than half a million birds protected by AB 454, the project will cause significant unmitigated impacts.

If the adjustment factors I applied to the CAS fatality data also apply to the proposed project, then we would predict much higher fatality rates caused by window collisions. The adjustment factors applied to CAS fatalities found by searchers increased the mean estimated annual fatalities by a factor of 13.5. If fatalities at the project's buildings are similarly represented by more small-bodied birds, then the mean annual fatlity rate would be 83,376 birds. Even if the project implemented mitigation measures that were 90% effective, it would still kill >8,000 birds per year.

Given the predicted bird-window fatality predictions for the project, it is understandable why window collisions are often characterized as either the second or third largest source or human-caused bird mortality. The numbers behind these characterizations are often attributed to Klem's (1990) and Dunn's (1993) estimates of about 100 million to 1 billion bird fatalities per year in the USA, or more recently Loss et al.'s (2014) estimate of 365-988 million bird fatalities in the USA or Calvert et al.'s (2013) and Machtans et al.'s (2013) estimates of 22.4 million and 25 million bird fatalities in Canada, respectively. However, these national estimates were based largely on study-specific fatality estimates that were not adjusted for the proportion of fatalities not found. These national estimates, as large as they are, are likely biased low.

Wildlife Movement

I concur with UCSF's (2020:4.3-3) conclusion, "*The San Francisco Peninsula is an important migratory stopover for birds along the Pacific Flyway—one of the four major migratory routes in North America*." However, I disagree with the EIR where it implies that lack of an established wildlife corridor contributes to its alleged less-than-significant impact on wildlife movement in the region. With this argument, the EIR introduces a false standard. The primary phrase of the CEQA standard goes to wildlife movement regardless of whether the movement is channeled by a corridor. A site such as the proposed project site is critically important for wildlife movement because it composes a diminishing patch of natural cover within an expanse of anthropogenic land uses, forcing more volant wildlife to use the site as stopover and staging habitat during migration, dispersal, and home range patrol (Warnock 2010, Taylor et al. 2011, Runge et al. 2014).

The other argument leading to the EIR's less-than-significant determination is that proposed mitigation will lessen bird-window collision mortality. Even if mitigation measures *do* succeed in lessening bird-window collision mortality, it will have no effect on the project's impacts to movement of wildlife that survive their encounters with the buildings. The tall buildings on the Campus would pose a barrier to movement that is additional to the threat of window collision. Many birds and bats attempting to fly to or from Mount Sutro would have to detour around the buildings, risking predation by peregrine falcons which exploit these types of situations, and costing valuable energy needed for long-distance travel. Inserting multiple tall buildings into the aerohabitat of birds and bats would cause significant adverse impacts to those birds and bats.

CUMULATIVE IMPACTS

The EIR mischaracterizes cumulative impacts as merely residual impacts of mitigation that was incompletely effective. The EIR claims that because the impacts of the Mount Sutro Open Space Vegetation Management Plan were fully mitigated, there would be no cumulative impacts. If cumulative effects were indeed merely residual impacts of inadequate mitigation, then CEQA would require an inadequate mitigation analysis instead of a cumulative impacts analysis.

The other argument used in the EIR to dismiss cumulative impacts is that the only projects that could be listed or assessed in San Francisco would be redevelopment of areas already built. The EIR claims that redevelopment contributes no cumulative impacts because redeveloped areas already removed all biological resources. But this argument neglects the very impact that is likely the largest posed by the project to biological resources. Just as the project poses potentially severe bird-window collision impacts, so too do new buildings going up in place of older buildings. New buildings in San Francisco are glass-covered. An appropriate cumulative impacts analysis would include a tally of predicted or estimated fatality rates of birds colliding with glass façades of recently built, planned, and foreseeable buildings in San Francisco.

The nature of the project's likely impacts, and those of other buildings in San Francisco, warrant a serious cumulative impacts analysis. Bird abundance across North America has declined 29% over the last 48 years (Rosenberg et al. 2019). This decline will result in substantial ecological and economic consequences, the magnitude of which has yet to be understood. Because windows are recognized as one of the principal anthropogenic sources of bird mortality, their cumulative effects among San Francisco's new buildings must be analyzed and mitigated.

MITIGATION

BIO-1c and BIO-1d: Preconstruction Surveys for Bird Nests and Bat Roosts

I understand that the EIR proposes to mitigate potentially significant impacts by having a biologist conduct pre-construction surveys for nesting birds within 250 feet of the construction area and for roosting bats within 50 feet of the construction area within 7 days prior to initiation of construction activities. I disagree, however, that the proposed measures would reduce impacts to less-than-significant.

Preconstruction surveys should be performed. However, it needs to be understood that preconstruction surveys, which are also often referred to as take-avoidance surveys, are really just last-minute salvage efforts to prevent injury or death of the most readily detectable individuals. Preconstruction surveys are limited in their mitigation effect as they detect only small fractions of bird nests and roosting bats occurring on a project site. Bird nests are usually concealed so that they are not discovered and their

occupants destroyed by predators. Locating hummingbird nests, for example, can be nearly impossible. Locating roosting bats is likewise very difficult (Kunz and Lumsden 2003). Preconstruction surveys alone fail to prevent the deaths of most of the animals at risk, nor do they do anything to prevent habitat destruction and lost reproductive capacity.

Preconstruction surveys perform better when they are informed by earlier detection surveys, which have been carefully designed by species' experts and natural resource agency biologists. Detection surveys should be performed early enough to not only inform preconstruction surveys, but also the public and decision-makers about potential project impacts. This early timing of detection surveys is also needed to inform the formulation of mitigation measures, including compensatory mitigation for those impacts than cannot be avoided.

Take-avoidance surveys cannot lessen impacts to nesting birds and roosting bats without first informing the public and decision-makers of the magnitudes of potential impacts, nor without informing survey personnel where to look. The effort needs to be made to map out where birds are nesting and bats roosting, and it needs to be made according to biologically appropriate protocols rather than in a rush to stay just ahead of the tractor blade.

BIO-2b: Bird-Safe Building Treatments

I understand that the EIR proposes to mitigate potentially significant impacts by (1) minimizing unnecessary light emissions from interior and exterior portions of buildings; (2) exploring and adopting window glazing options such as marked glass or UV-reflective glass; and (3) minimizing light and glare of façades through orientation of the building, choice of materials, and landscaping. I disagree, however, that the proposed measures would reduce impacts to less-than-significant.

City of San Francisco (2011) prepared excellent standards for bird-safe buildings, which the EIR cites. City of San Francisco (2011) presents options that include (1) glass and façade treatments to mitigate the effects of transparent and reflective glass; and (2) lighting treatments. But much has been learned by research performed since 2011. For example, mitigation applied to CAS substantially reduced bird-window collision mortality (Kahle et al. 2016), yet the measure implemented was not covered in City of San Francisco (2011). Furthermore, the measures that were recommended in City of San Francisco (2011) were often of uncertain efficacy. Most of the evidence of mitigation efficacy has been anecdotal, although it always helps when the magnitude of effect is very large. As an example of convincing anecdotal evidence, the recent replacement of window panels with fritted glass reduced bird-window collision fatalities by 90% at New York City's Javits Center – a notoriously dangerous building to birds. More often, sound evidence of mitigation efficacy derives from experimentation. I will discuss experimentation further, but first I will recommend mitigation that should precede the measures proposed in the EIR.

The third of the three proposed measures in the EIR is minimizing light and glare of façades through orientation of the building, choice of materials, and landscaping. However, this approach needs to be informed by how birds would encounter and perceive the buildings. The EIR does not identify materials to be used, but it does illustrate building orientations that appear to have been decided already. The EIR is unclear about whether and how building orientation would be decided to minimize collision risk, nor does it indicate the structural materials to be used on any particular portions of buildings. It seems these decisions are either already decided, in the case of building orientation, or in the case of materials to be used, they are deferred to an unspecified later date. Neither are performance standards are linked to any of these measures.

To inform the third measure, as well as to inform of the relative hazards of building locations and building heights, behavioral ecologists need to survey the project area to adequately characterize flight patterns and reactions to existing buildings. Surveys are needed to learn how many of each bird species fly through the area and at what times of day and night. Nocturnal surveys can be performed using a thermal-imaging camera or radar. Such surveys would inform of collision risk, and could inform mitigation strategies involving light management and design of façades facing the prevailing approach directions of migrating birds.

Once it is better understood how birds use their aerohabitat at the project site, and after reasonable measures have been taken to minimize collision risk due to building location, height and orientation, structural measures need to be considered with the understanding that most remain highly uncertainty in their efficacy. An exception would be the decision to minimize the extent of glass on building façades; minimizing glass is surely the most effective measure other than building locations, heights and orientation. If some other measure is universally applied, and if it later proves ineffective, the cost to wildlife and to the University could be very high. Although I do not know the exact cost of the replacement of clear glass panels with fritted glass at the Javits Center, it was likely a major portion of a $1.5 billion renovation.

In the face of high predicted fatality rates, and in the face of high uncertainty over mitigation efficacy, erring on the side of caution would be the prudent approach. Informed decisions are needed. Implementation of measures according to tenets of experimental design would most quickly and most convincingly facilitate tests of efficacy. If fatality monitoring was initiated immediately and if it covered both old and new buildings, then opportune before-after, control-impact (BACI) experimental designs could be used to test the efficacy of various measures. As BACI tests are completed, mitigation measures could be revised for buildings yet to be built. Regardless of whether mitigation measures are experimentally tested, post-construction fatality monitoring should be performed.

The predicted magnitude of bird-window collision fatalities is so large that even if one or more mitigation measures reduce fatalities by 90%, the 10% of fatalities that could not be avoided will still be more than enough to warrant compensatory mitigation. UCSF

should mitigate bird-window collision impacts by purchasing easements or fee title to open space to be preserved as wildlife habitat.

Compensatory mitigation ought also to include funding contributions to wildlife rehabilitation facilities to cover the costs of injured animals that will be delivered to these facilities for care. Most of the wildlife injuries will likely be caused by window collisions.

Recommendations on Siting

For birds encountering tall buildings, the project site is inherently dangerous due to its location at the base of a steeply-sloped, forested open space reserve, which is also one of the last remaining patches of open space for migrating and dispersing birds to find stop-over habitat in San Francisco. Even if mitigation measures could reduce bird collision fatalities by 90%, the unavoidable 10% of fatalities and the energetic costs of the barrier effect of the buildings would cause significant, long-term impacts to birds. What I found to be most effective at minimizing collision fatalities caused by wind turbines was careful siting (Smallwood et al. 2017). The same approach would likely prove most effective at minimizing building impacts on wildlife.

There are two types of siting: Macro and micro. Macro-siting refers to selection of a project site, whereas micro-siting refers to selection of locations for project components within the boundary of a project site. Both levels of siting can substantially mitigate impacts to wildlife, but macro-siting usually offers the greatest opportunity for minimizing impacts. Applying macro-siting to the proposed project would consider impacts to wildlife if the new square footage was located at the site of UCSF's Medical Center at Mount Zion, or in Bayview at the Hunters Point shipyard, as examples. Of course, macro-siting must also consider project objectives but can also consider collateral opportunities for students and host communities. Other factors considered, siting the project farther from Mount Sutro Open Space Reserve would vastly lessen impacts to birds.

Micro-siting also bears considerable capacity for reducing project impacts to birds, but probably not without reducing the size of the project and minimizing the extent of windows on building façades. Building heights would need to be reduced, both on the Parnassus Campus and Aldea Housing. The tallest of buildings would best be sited as far north as possible on the Parnassus Campus to minimize bird impacts. The tallest building in Aldea Housing would kill fewer birds if it was placed lower on the slope, closer to Clarendon Avenue, and if the shortest buildings were placed higher on the slope. In both cases, the micro-siting strategy would be to site the taller buildings farther from the steep, forested slopes of Mount Sutro in order to give birds more room to negotiate their ways hazard-free to or from Mount Sutro.

Thank you for your attention,

Shawn Smallwood, Ph.D.

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Kenneth Shawn Smallwood
Curriculum Vitae

3108 Finch Street
Davis, CA 95616
Phone (530) 756-4598
Cell (530) 601-6857
puma@dcn.org

Born May 3, 1963 in
Sacramento, California.
Married, father of two.

Ecologist

Expertise

- Finding solutions to controversial problems related to wildlife interactions with human industry, infrastructure, and activities;

- Using systems analysis and experimental design principles to identify meaningful ecological patterns that can inform management decisions.

Education

Ph.D. Ecology, University of California, Davis. September 1990.
M.S. Ecology, University of California, Davis. June 1987.
B.S. Anthropology, University of California, Davis. June 1985.
Corcoran High School, Corcoran, California. June 1981.

Experience

- 443 professional publications, including:
- 80 peer reviewed publications
- 24 in non-reviewed proceedings
- 337 reports, declarations, posters and book reviews
- 8 in mass media outlets
- 84 public presentations of research results at meetings
- Reviewed many professional papers and reports
- Testified in 4 court cases.

Editing for scientific journals: Guest Editor, *Wildlife Society Bulletin*, 2012-2013, of invited papers representing international views on the impacts of wind energy on wildlife and how to mitigate the impacts. Associate Editor, *Journal of Wildlife Management*, March 2004 to 30 June 2007. Editorial Board Member, *Environmental Management*, 10/1999 to 8/2004. Associate Editor, *Biological Conservation*, 9/1994 to 9/1995.

Member, Alameda County Scientific Review Committee (SRC), August 2006 to April 2011. The five-member committee investigated the causes of bird and bat collisions in the Altamont Pass Wind Resource Area, and recommended mitigation and monitoring measures. The SRC

reviewed the science underlying the Alameda County Avian Protection Program, and advised the County on how to reduce wildlife fatalities.

Consulting Ecologist, 2004-2007, California Energy Commission (CEC). Provided consulting services as needed to the CEC on renewable energy impacts, monitoring and research, and produced several reports. Also collaborated with Lawrence-Livermore National Lab on research to understand and reduce wind turbine impacts on wildlife.

Consulting Ecologist, 1999-2013, U.S. Navy. Performed endangered species surveys, hazardous waste site monitoring, and habitat restoration for the endangered San Joaquin kangaroo rat, California tiger salamander, California red-legged frog, California clapper rail, western burrowing owl, salt marsh harvest mouse, and other species at Naval Air Station Lemoore; Naval Weapons Station, Seal Beach, Detachment Concord; Naval Security Group Activity, Skaggs Island; National Radio Transmitter Facility, Dixon; and, Naval Outlying Landing Field Imperial Beach.

Part-time Lecturer, 1998-2005, California State University, Sacramento. Taught Contemporary Environmental Issues, Natural Resources Conservation (twice), Mammalogy, Behavioral Ecology, and Ornithology Lab.

Senior Ecologist, 1999-2005, BioResource Consultants. Designed and implemented research and monitoring studies related to avian fatalities at wind turbines, avian electrocutions on electric distribution poles across California, and avian fatalities at transmission lines.

Systems Ecologist, 1996 to present, Consulting in the Public Interest, www.cipi.com. Member of a multi-disciplinary consortium of scientists facilitating large-scale, environmental planning projects and litigation. We provide risk assessments, assessments of management practices, and expert witness testimony.

Chairman, Conservation Affairs Committee, The Wildlife Society--Western Section, 1999-2001. Prepared position statements and led efforts directed toward conservation issues, including travel to Washington, D.C. to lobby Congress for more wildlife conservation funding.

Systems Ecologist, 1995-2000, Institute for Sustainable Development. Headed ISD's program on integrated resources management. Developed indicators of ecological integrity for large areas, using remotely sensed data, local community involvement and GIS.

Associate, 1997-1998, Department of Agronomy and Range Science, University of California, Davis. Worked with Shu Geng and Mingua Zhang on several studies related to wildlife interactions with agriculture and patterns of fertilizer and pesticide residues in groundwater across a large landscape.

Lead Scientist, 1996-1999, National Endangered Species Network. Headed NESN's efforts to inform academic scientists and environmental activists about emerging issues regarding the Endangered Species Act and other environmental laws pertaining to special-status species. Also testified at public hearings on behalf of environmental groups and endangered species.

Ecologist, 1997-1998, Western Foundation of Vertebrate Zoology. Conducted field research to

determine the impact of past mercury mining on the status of California red-legged frogs in Santa Clara County, California.

Senior Systems Ecologist, 1994-1995, EIP Associates, Sacramento, California. Provided consulting services in environmental planning. Developed quantitative assessment of land units for their conservation and restoration opportunities, using the ecological resource requirements of 29 special-status species. Developed ecological indicators for prioritizing areas within Yolo County to receive mitigation funds for habitat easements and restoration.

Post-Graduate Researcher, 1990-1994, Department of Agronomy and Range Science*, U.C. Davis*. Under the mentorship of Dr. Shu Geng, studied landscape and management effects on temporal and spatial patterns of abundance among pocket gophers and species of Falconiformes and Carnivora in the Sacramento Valley. Also managed and analyzed a data base of energy use in California agriculture, and assisted with a landscape (GIS) study of groundwater contamination across Tulare County, California.

Work experience in graduate school: Co-taught Conservation Biology with Dr. Christine Schonewald, 1991 & 1993, UC Davis Graduate Group in Ecology; Reader for Dr. Richard Coss's course on Psychobiology in 1990, UC Davis Department of Psychology; Research Assistant to Dr. Walter E. Howard, 1988-1990, UC Davis Department of Wildlife and Fisheries Biology, testing durable baits for pocket gopher management in forest clearcuts; Research Assistant to Dr. Terrell P. Salmon, 1987-1988, UC Wildlife Extension, Department of Wildlife and Fisheries Biology, developing empirical models of mammal and bird invasions in North America, and a rating system for priority research and control of exotic species based on economic, environmental and human health hazards in California. Student Assistant to Dr. E. Lee Fitzhugh, 1985-1987, UC Cooperative Extension, Department of Wildlife and Fisheries Biology, developing and implementing a statewide mountain lion track count for long-term monitoring of numbers and distribution.

Fulbright Research Fellow, Indonesia, 1988. Tested use of new sampling methods for numerical monitoring of Sumatran tiger and six other species of endemic felids, and evaluated methods used by other researchers.

Projects

Repowering wind energy projects through careful siting of new wind turbines using map-based collision hazard models to minimize impacts to volant wildlife. Funded by wind companies (principally NextEra Renewable Energy, Inc.), California Energy Commission and East Bay Regional Park District, I have collaborated with a GIS analyst and managed a crew of five field biologists performing golden eagle behavior surveys and nocturnal surveys on bats and owls. The goal is to quantify flight patterns for development of predictive models to more carefully site new wind turbines in repowering projects. Focused behavior surveys began May 2012 and continue. Collision hazard models have been prepared for seven wind projects, three of which were built. Planning for additional repowering projects is underway.

Test avian safety of new mixer-ejector wind turbine (MEWT). Designed and implemented a before-after, control-impact experimental design to test the avian safety of a new, shrouded wind turbine developed by Ogin Inc. (formerly known as FloDesign Wind Turbine Corporation). Supported by a

$718,000 grant from the California Energy Commission's Public Interest Energy Research program and a 20% match share contribution from Ogin, I managed a crew of seven field biologists who performed periodic fatality searches and behavior surveys, carcass detection trials, nocturnal behavior surveys using a thermal camera, and spatial analyses with the collaboration of a GIS analyst. Field work began 1 April 2012 and ended 30 March 2015 without Ogin installing its MEWTs, but we still achieved multiple important scientific advances.

Reduce avian mortality due to wind turbines at Altamont Pass. Studied wildlife impacts caused by 5,400 wind turbines at the world's most notorious wind resource area. Studied how impacts are perceived by monitoring and how they are affected by terrain, wind patterns, food resources, range management practices, wind turbine operations, seasonal patterns, population cycles, infrastructure management such as electric distribution, animal behavior and social interactions.

Reduce avian mortality on electric distribution poles. Directed research toward reducing bird electrocutions on electric distribution poles, 2000-2007. Oversaw 5 founds of fatality searches at 10,000 poles from Orange County to Glenn County, California, and produced two large reports.

Cook *et al*. v. Rockwell International *et al*., No. 90-K-181 (D. Colorado). Provided expert testimony on the role of burrowing animals in affecting the fate of buried and surface-deposited radioactive and hazardous chemical wastes at the Rocky Flats Plant, Colorado. Provided expert reports based on four site visits and an extensive document review of burrowing animals. Conducted transect surveys for evidence of burrowing animals and other wildlife on and around waste facilities. Discovered substantial intrusion of waste structures by burrowing animals. I testified in federal court in November 2005, and my clients were subsequently awarded a $553,000,000 judgment by a jury. After appeals the award was increased to two billion dollars.

Hanford Nuclear Reservation Litigation. Provided expert testimony on the role of burrowing animals in affecting the fate of buried radioactive wastes at the Hanford Nuclear Reservation, Washington. Provided three expert reports based on three site visits and extensive document review. Predicted and verified a certain population density of pocket gophers on buried waste structures, as well as incidence of radionuclide contamination in body tissue. Conducted transect surveys for evidence of burrowing animals and other wildlife on and around waste facilities. Discovered substantial intrusion of waste structures by burrowing animals.

Expert testimony and declarations on proposed residential and commercial developments, gas-fired power plants, wind, solar and geothermal projects, water transfers and water transfer delivery systems, endangered species recovery plans, Habitat Conservation Plans and Natural Communities Conservation Programs. Testified before multiple government agencies, Tribunals, Boards of Supervisors and City Councils, and participated with press conferences and depositions. Prepared expert witness reports and court declarations, which are summarized under Reports (below).

Protocol-level surveys for special-status species. Used California Department of Fish and Wildlife and US Fish and Wildlife Service protocols to search for California red-legged frog, California tiger salamander, arroyo southwestern toad, blunt-nosed leopard lizard, western pond turtle, giant kangaroo rat, San Joaquin kangaroo rat, San Joaquin kit fox, western burrowing owl, Swainson's hawk, Valley elderberry longhorn beetle and other special-status species.

Conservation of San Joaquin kangaroo rat. Performed research to identify factors responsible for the

decline of this endangered species at Lemoore Naval Air Station, 2000-2013, and implemented habitat enhancements designed to reverse the trend and expand the population.

Impact of West Nile Virus on yellow-billed magpies. Funded by Sacramento-Yolo Mosquito and Vector Control District, 2005-2008, compared survey results pre- and post-West Nile Virus epidemic for multiple bird species in the Sacramento Valley, particularly on yellow-billed magpie and American crow due to susceptibility to WNV.

Workshops on HCPs. Assisted Dr. Michael Morrison with organizing and conducting a 2-day workshop on Habitat Conservation Plans, sponsored by Southern California Edison, and another 1-day workshop sponsored by PG&E. These Workshops were attended by academics, attorneys, and consultants with HCP experience. We guest-edited a Proceedings published in Environmental Management.

Mapping of biological resources along Highways 101, 46 and 41. Used GPS and GIS to delineate vegetation complexes and locations of special-status species along 26 miles of highway in San Luis Obispo County, 14 miles of highway and roadway in Monterey County, and in a large area north of Fresno, including within reclaimed gravel mining pits.

GPS mapping and monitoring at restoration sites and at Caltrans mitigation sites. Monitored the success of elderberry shrubs at one location, the success of willows at another location, and the response of wildlife to the succession of vegetation at both sites. Also used GPS to monitor the response of fossorial animals to yellow star-thistle eradication and natural grassland restoration efforts at Bear Valley in Colusa County and at the decommissioned Mather Air Force Base in Sacramento County.

Mercury effects on Red-legged Frog. Assisted Dr. Michael Morrison and US Fish and Wildlife Service in assessing the possible impacts of historical mercury mining on the federally listed California red-legged frog in Santa Clara County. Also measured habitat variables in streams.

Opposition to proposed No Surprises rule. Wrote a white paper and summary letter explaining scientific grounds for opposing the incidental take permit (ITP) rules providing ITP applicants and holders with general assurances they will be free of compliance with the Endangered Species Act once they adhere to the terms of a "properly functioning HCP." Submitted 188 signatures of scientists and environmental professionals concerned about No Surprises rule US Fish and Wildlife Service, National Marine Fisheries Service, all US Senators.

Natomas Basin Habitat Conservation Plan alternative. Designed narrow channel marsh to increase the likelihood of survival and recovery in the wild of giant garter snake, Swainson's hawk and Valley Elderberry Longhorn Beetle. The design included replication and interspersion of treatments for experimental testing of critical habitat elements. I provided a report to Northern Territories, Inc.

Assessments of agricultural production system and environmental technology transfer to China. Twice visited China and interviewed scientists, industrialists, agriculturalists, and the Directors of the Chinese Environmental Protection Agency and the Department of Agriculture to assess the need and possible pathways for environmental clean-up technologies and trade opportunities between the US and China.

Yolo County Habitat Conservation Plan. Conducted landscape ecology study of Yolo County to spatially prioritize allocation of mitigation efforts to improve ecosystem functionality within the County from the perspective of 29 special-status species of wildlife and plants. Used a hierarchically structured indicators approach to apply principles of landscape and ecosystem ecology, conservation biology, and local values in rating land units. Derived GIS maps to help guide the conservation area design, and then developed implementation strategies.

Mountain lion track count. Developed and conducted a carnivore monitoring program throughout California since 1985. Species counted include mountain lion, bobcat, black bear, coyote, red and gray fox, raccoon, striped skunk, badger, and black-tailed deer. Vegetation and land use are also monitored. Track survey transect was established on dusty, dirt roads within randomly selected quadrats.

Sumatran tiger and other felids. Upon award of Fulbright Research Fellowship, I designed and initiated track counts for seven species of wild cats in Sumatra, including Sumatran tiger, fishing cat, and golden cat. Spent four months on Sumatra and Java in 1988, and learned Bahasa Indonesia, the official Indonesian language.

Wildlife in agriculture. Beginning as post-graduate research, I studied pocket gophers and other wildlife in 40 alfalfa fields throughout the Sacramento Valley, and I surveyed for wildlife along a 200 mile road transect since 1989 with a hiatus of 1996-2004. The data are analyzed using GIS and methods from landscape ecology, and the results published and presented orally to farming groups in California and elsewhere. I also conducted the first study of wildlife in cover crops used on vineyards and orchards.

Agricultural energy use and Tulare County groundwater study. Developed and analyzed a data base of energy use in California agriculture, and collaborated on a landscape (GIS) study of groundwater contamination across Tulare County, California.

Pocket gopher damage in forest clear-cuts. Developed gopher sampling methods and tested various poison baits and baiting regimes in the largest-ever field study of pocket gopher management in forest plantations, involving 68 research plots in 55 clear-cuts among 6 National Forests in northern California.

Risk assessment of exotic species in North America. Developed empirical models of mammal and bird species invasions in North America, as well as a rating system for assigning priority research and control to exotic species in California, based on economic, environmental, and human health hazards.

Representative Clients/Funders

Law Offices of Stephan C. Volker
Eric K. Gillespie Professional Corporation
Law Offices of Berger & Montague
Lozeau | Drury LLP
Law Offices of Roy Haber
Law Offices of Edward MacDonald
Law Office of John Gabrielli
Law Office of Bill Kopper
Law Office of Donald B. Mooney
Law Office of Veneruso & Moncharsh
Law Office of Steven Thompson
Law Office of Brian Gaffney
California Wildlife Federation
Defenders of Wildlife
Sierra Club
National Endangered Species Network
Spirit of the Sage Council
The Humane Society
Hagens Berman LLP
Environmental Protection Information Center
Goldberg, Kamin & Garvin, Attorneys at Law
Californians for Renewable Energy (CARE)
Seatuck Environmental Association
Friends of the Columbia Gorge, Inc.
Save Our Scenic Area
Alliance to Protect Nantucket Sound
Friends of the Swainson's Hawk
Alameda Creek Alliance
Center for Biological Diversity
California Native Plant Society
Endangered Wildlife Trust
and BirdLife South Africa
AquAlliance
Oregon Natural Desert Association
Save Our Sound
G3 Energy and Pattern Energy
Emerald Farms
Pacific Gas & Electric Co.
Southern California Edison Co.
Georgia-Pacific Timber Co.
Northern Territories Inc.
David Magney Environmental Consulting
Wildlife History Foundation
NextEra Energy Resources, LLC
FloDesign Wind Turbine
EDF Renewables
National Renewable Energy Lab
Altamont Winds LLC
Comstocks Business (magazine)
BioResource Consultants
Tierra Data
Black and Veatch
Terry Preston, Wildlife Ecology Research Center
EcoStat, Inc.
US Navy
US Department of Agriculture
US Forest Service
US Fish & Wildlife Service
US Department of Justice
California Energy Commission
California Office of the Attorney General
California Department of Fish & Wildlife
California Department of Transportation
California Department of Forestry
California Department of Food & Agriculture
Ventura County Counsel
County of Yolo
Tahoe Regional Planning Agency
Sustainable Agriculture Research & Education Program
Sacramento-Yolo Mosquito and Vector Control District
East Bay Regional Park District
County of Alameda
Don & LaNelle Silverstien
Seventh Day Adventist Church
Escuela de la Raza Unida
Susan Pelican and Howard Beeman
Residents Against Inconsistent Development, Inc.
Bob Sarvey
Mike Boyd
Hillcroft Neighborhood Fund
Joint Labor Management Committee, Retail Food Industry
Lisa Rocca
Kevin Jackson
Dawn Stover and Jay Letto
Nancy Havassy
Catherine Portman (for Brenda Cedarblade)
Ventus Environmental Solutions, Inc.
Panorama Environmental, Inc.
Adams Broadwell Professional Corporation

Representative special-status species experience

Common name	Species name	Description
Field experience		
California red-legged frog	*Rana aurora draytonii*	Protocol searches; Many detections
Foothill yellow-legged frog	*Rana boylii*	Presence surveys; Many detections
Western spadefoot	*Spea hammondii*	Presence surveys; Few detections
California tiger salamander	*Ambystoma californiense*	Protocol searches; Many detections
Coast range newt	*Taricha torosa torosa*	Searches and multiple detections
Blunt-nosed leopard lizard	*Gambelia sila*	Detected in San Luis Obispo County
California horned lizard	*Phrynosoma coronatum frontale*	Searches; Many detections
Western pond turtle	*Clemmys marmorata*	Searches; Many detections
San Joaquin kit fox	*Vulpes macrotis mutica*	Protocol searches; detections
Sumatran tiger	*Panthera tigris*	Research in Sumatra
Mountain lion	*Puma concolor californicus*	Research and publications
Point Arena mountain beaver	*Aplodontia rufa nigra*	Remote camera operation
Giant kangaroo rat	*Dipodomys ingens*	Detected in Cholame Valley
San Joaquin kangaroo rat	*Dipodomys nitratoides*	Research, conservation at NAS Lemoore
Monterey dusky-footed woodrat	*Neotoma fuscipes luciana*	Non-target captures and mapping of dens
Salt marsh harvest mouse	*Reithrodontomys raviventris*	Habitat assessment, monitoring
Salinas harvest mouse	*Reithrodontomys megalotus distichlus*	Captures; habitat assessment
California clapper rail	*Rallus longirostris*	Surveys and detections
Golden eagle	*Aquila chrysaetos*	Research in Altamont Pass
Swainson's hawk	*Buteo swainsoni*	Research in Sacramento Valley
Northern harrier	*Circus cyaeneus*	Research and publication
White-tailed kite	*Elanus leucurus*	Research and publication
Loggerhead shrike	*Lanius ludovicianus*	Research in Sacramento Valley
Least Bell's vireo	*Vireo bellii pusillus*	Detected in Monterey County
Willow flycatcher	*Empidonax traillii extimus*	Research at Sierra Nevada breeding sites
Burrowing owl	*Athene cunicularia hypugia*	Research at multiple locations
Valley elderberry longhorn beetle	*Desmocerus californicus dimorphus*	Research and publication
Analytical		
Arroyo southwestern toad	*Bufo microscaphus californicus*	Research and report.
Giant garter snake	*Thamnophis gigas*	Research and publication
Northern goshawk	*Accipiter gentilis*	Research and publication
Northern spotted owl	*Strix occidentalis*	Research and reports
Alameda whipsnake	*Masticophis lateralis euryxanthus*	Expert testimony

Peer Reviewed Publications

Smallwood, K. S. In press. The challenges of repowering. Proceedings from the Conference on Wind Energy and Wildlife Impacts, March 2015, Berlin, Germany. Springer.

May, R., A.B. Gill, J. Köppel, R.H.W. Langston, M. Reichenbach, M. Scheidat, S. Smallwood and C.C. Voigt. In press. Future research directions. Proceedings from the Conference on Wind Energy and Wildlife Impacts, March 2015, Berlin, Germany. Springer.

Smallwood, K.S. 2016. Monitoring birds. M. Perrow, Ed., Wildlife and Wind Farms: conflicts and solutions. Pelagic Publishing. In press

Smallwood, K.S., L. Neher, and D.A. Bell. 2016. Siting to Minimize Raptor Collisions: an example from the Repowering Altamont Pass Wind Resource Area. M. Perrow, Ed., Wildlife and Wind Farms: conflicts and solutions. Pelagic Publishing. In press

Johnson, D. H., S. R. Loss, K. S. Smallwood, W. P. Erickson. 2016. Avian fatalities at wind energy facilities in North America: A comparison of recent approaches. Human–Wildlife Interactions 10(1): 7-18.

Sadar, M. J., D. S.-M. Guzman, A. Mete, J. Foley, N. Stephenson, K. H. Rogers, C. Grosset, K. S. Smallwood, J. Shipman, A. Wells, S. D. White, D. A. Bell, and M. G. Hawkins. 2015. Mange Caused by a novel Micnemidocoptes mite in a Golden Eagle (*Aquila chrysaetos*). Journal of Avian Medicine and Surgery 29(3):231-237.

Smallwood, K. S. 2015. Habitat fragmentation and corridors. Pages 84-101 in M. L. Morrison and H. A. Mathewson, Eds., Wildlife habitat conservation: concepts, challenges, and solutions. John Hopkins University Press, Baltimore, Maryland, USA.

Mete, A., N. Stephenson, K. Rogers, M. G. Hawkins, M. Sadar, D. Guzman, D. A. Bell, J. Shipman, A. Wells, K. S. Smallwood, and J. Foley. 2014. Emergence of Knemidocoptic mange in wild Golden Eagles (Aquila chrysaetos) in California. Emerging Infectious Diseases 20(10):1716-1718.

Smallwood, K. S. 2013. Introduction: Wind-energy development and wildlife conservation. Wildlife Society Bulletin 37: 3-4.

Smallwood, K. S. 2013. Comparing bird and bat fatality-rate estimates among North American wind-energy projects. Wildlife Society Bulletin 37:19-33. + Online Supplemental Material.

Smallwood, K. S., L. Neher, J. Mount, and R. C. E. Culver. 2013. Nesting Burrowing Owl Abundance in the Altamont Pass Wind Resource Area, California. Wildlife Society Bulletin: 37:787-795.

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Bell, D. A., and K. S. Smallwood. 2010. Birds of prey remain at risk. Science 330:913.

Smallwood, K. S., D. A. Bell, S. A. Snyder, and J. E. DiDonato. 2010. Novel scavenger removal trials increase estimates of wind turbine-caused avian fatality rates. Journal of Wildlife Management 74: 1089-1097 + Online Supplemental Material.

Smallwood, K. S., L. Neher, and D. A. Bell. 2009. Map-based repowering and reorganization of a wind resource area to minimize burrowing owl and other bird fatalities. Energies 2009(2):915-943. http://www.mdpi.com/1996-1073/2/4/915

Smallwood, K. S. and B. Nakamoto. 2009. Impacts of West Nile Virus Epizootic on Yellow-Billed Magpie, American Crow, and other Birds in the Sacramento Valley, California. The Condor 111:247-254.

Smallwood, K. S., L. Rugge, and M. L. Morrison. 2009. Influence of Behavior on Bird Mortality in Wind Energy Developments: The Altamont Pass Wind Resource Area, California. Journal of Wildlife Management 73:1082-1098.

Smallwood, K. S. and B. Karas. 2009. Avian and Bat Fatality Rates at Old-Generation and Repowered Wind Turbines in California. Journal of Wildlife Management 73:1062-1071.

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Cain, J. W. III, K. S. Smallwood, M. L. Morrison, and H. L. Loffland. 2005. Influence of mammal activity on nesting success of Passerines. J. Wildlife Management 70:522-531.

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Zhang, M., K. S. Smallwood, and E. Anderson. 2002. Relating indicators of ecological health and integrity to assess risks to sustainable agriculture and native biota. Pages 757-768 *in* D.J. Rapport, W.L. Lasley, D.E. Rolston, N.O. Nielsen, C.O. Qualset, and A.B. Damania (eds.), Managing for Healthy Ecosystems, Lewis Publishers, Boca Raton, Florida USA.

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Smallwood, K. S. 2001. Linking habitat restoration to meaningful units of animal demography. Restoration Ecology 9:253-261.

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Comments on Environmental Documents

I was retained or commissioned to comment on environmental planning and review documents, including:

- Comments on proposed rule for incidental eagle take (2016, 49 pp);
- Revised Draft Giant Garter Snake Recovery Plan of 2015 (2016, 18 pp);
- Supplementary Reply Witness Statement Amherst Island Wind Farm, Ontario (2015, 38 pp);
- Witness Statement on Amherst Island Wind Farm, Ontario (2015, 31 pp);
- Second Reply Witness Statement on White Pines Wind Farm, Ontario (2015, 6 pp);
- Reply Witness Statement on White Pines Wind Farm, Ontario (2015, 10 pp);
- Witness Statement on White Pines Wind Farm, Ontario (2015, 9 pp);
- Proposed Section 24 Specific Plan Agua Caliente Band of Cahuilla Indians DEIS (2015, 9 pp);

- Replies to comments 24 Specific Plan Agua Caliente Band of Cahuilla Indians FEIS (2015, 6 pp);
- Sierra Lakes Commerce Center Project DEIR (2015, 9 pp);
- West Valley Logistics Center Specific Plan DEIR(2015, 10 pp);
- World Logistic Center Specific Plan FEIR (2015, 12 pp);
- Bay Delta Conservation Plan EIR/EIS (2014, 21 pp);
- Addison Wind Energy Project DEIR (2014, 32 pp);
- Response to Comments on the Addison Wind Energy Project DEIR (2014, 15 pp);
- Addison and Rising Tree Wind Energy Project FEIR (2014, 12 pp);
- Alta East Wind Energy Project FEIS (2013, 23 pp);
- Blythe Solar Power Project Staff Assessment, California Energy Commission (2013, 16 pp);
- Clearwater and Yakima Solar Projects DEIR (2013, 9 pp);
- Cuyama Solar Project DEIR (2014, 19 pp);
- Draft Desert Renewable Energy Conservation Plan (DRECP) EIR/EIS (2015, 49 pp);
- Kingbird Solar Photovoltaic Project EIR (2013, 19 pp);
- Lucerne Valley Solar Project Initial Study & Mitigated Negative Declaration (2013, 12 pp);
- Palen Solar Electric Generating System Final Staff Assessment of California Energy Commission, (2014, 20 pp);
- Rebuttal testimony on Palen Solar Energy Generating System (2014, 9 pp);
- Rising Tree Wind Energy Project DEIR (2014, 32 pp);
- Response to Comments on the Rising Tree Wind Energy Project DEIR (2014, 15 pp);
- Soitec Solar Development Project Draft PEIR (2014, 18 pp);
- Comment on the Biological Opinion (08ESMF-00-2012-F-0387) of Oakland Zoo expansion on Alameda whipsnake and California red-legged frog (2014; 3 pp);
- West Antelope Solar Energy Project Initial Study and Negative Declaration (2013, 18 pp);
- Willow Springs Solar Photovoltaic Project DEIR (2015, 28 pp);
- Alameda Creek Bridge Replacement Project DEIR (2015, 10 pp);
- Declaration on Tule Wind project FEIR/FEIS (2013; 24 pp);
- Sunlight Partners LANDPRO Solar Project Mitigated Negative Declaration (2013; 11 pp);
- Declaration in opposition to BLM fracking (2013; 5 pp);
- Rosamond Solar Project Addendum EIR (2013; 13 pp);
- Pioneer Green Solar Project EIR (2013; 13 pp);
- Reply to Staff Responses to Comments on Soccer Center Solar Project Mitigated Negative Declaration (2013; 6 pp);
- Soccer Center Solar Project Mitigated Negative Declaration (2013; 10 pp);
- Plainview Solar Works Mitigated Negative Declaration (2013; 10 pp);
- Reply to the County Staff's Responses on comments to Imperial Valley Solar Company 2 Project (2013; 10 pp);
- Imperial Valley Solar Company 2 Project (2013; 13 pp);
- FRV Orion Solar Project DEIR (PP12232) (2013; 9 pp);
- Casa Diablo IV Geothermal Development Project (3013; 6 pp);
- Reply to Staff Responses to Comments on Casa Diablo IV Geothermal Development Project (2013; 8 pp);
- FEIS prepared for Alta East Wind Project (2013; 23 pp);

- Metropolitan Air Park DEIR, City of San Diego (2013;);
- Davidon Homes Tentative Subdivision Map and Rezoning Project DEIR (2013; 9 pp);
- Analysis of Biological Assessment of Oakland Zoo Expansion Impacts on Alameda Whipsnake (2013; 10 pp);
- Declaration on Campo Verde Solar project FEIR (2013; 11pp);
- Neg Dec comments on Davis Sewer Trunk Rehabilitation (2013; 8 pp);
- Declaration on North Steens Transmission Line FEIS (2012; 62 pp);
- City of Lancaster Revised Initial Study for Conditional Use Permits 12-08 and 12-09, Summer Solar and Springtime Solar Projects (2012; 8 pp);
- J&J Ranch, 24 Adobe Lane Environmental Review (2012; 14 pp);
- Reply to the County Staff's Responses on comments to Hudson Ranch Power II Geothermal Project and the Simbol Calipatria Plant II (2012; 8 pp);
- Hudson Ranch Power II Geothermal Project and the Simbol Calipatria Plant II (2012; 9 pp);
- Desert Harvest Solar Project EIS (2012; 15 pp);
- Solar Gen 2 Array Project DEIR (2012; 16 pp);
- Ocotillo Sol Project EIS (2012; 4 pp);
- Beacon Photovoltaic Project DEIR (2012; 5 pp);
- Declaration on Initial Study and Proposed Negative Declaration for the Butte Water District 2012 Water Transfer Program (2012; 11 pp);
- Mount Signal and Calexico Solar Farm Projects DEIR (2011; 16 pp);
- City of Elk Grove Sphere of Influence EIR (2011; 28 pp);
- Comment on Sutter Landing Park Solar Photovoltaic Project MND (2011; 9 pp);
- Statement of Shawn Smallwood, Ph.D. Regarding Proposed Rabik/Gudath Project, 22611 Coleman Valley Road, Bodega Bay (CPN 10-0002) (2011; 4 pp);
- Declaration of K. Shawn Smallwood on Biological Impacts of the Ivanpah Solar Electric Generating System (ISEGS) (2011; 9 pp);
- Comments on Draft Eagle Conservation Plan Guidance (2011; 13 pp);
- Comments on Draft EIR/EA for Niles Canyon Safety Improvement Project (2011; 16 pp);
- Declaration of K. Shawn Smallwood, Ph.D., on Biological Impacts of the Route 84 Safety Improvement Project (2011; 7 pp);
- Rebuttal Testimony of Witness #22, K. Shawn Smallwood, Ph.D, on Behalf of Intervenors Friends of The Columbia Gorge & Save Our Scenic Area (2010; 6 pp);
- Prefiled Direct Testimony of Witness #22, K. Shawn Smallwood, Ph.D, on Behalf of Intervenors Friends of the Columbia Gorge & Save Our Scenic Area. Comments on Whistling Ridge Wind Energy Power Project DEIS, Skamania County, Washington (2010; 41 pp);
- Evaluation of Klickitat County's Decisions on the Windy Flats West Wind Energy Project (2010; 17 pp);
- St. John's Church Project Draft Environmental Impact Report (2010; 14 pp.);
- Initial Study/Mitigated Negative Declaration for Results Radio Zone File #2009-001 (2010; 20 pp);
- Rio del Oro Specific Plan Project Final Environmental Impact Report (2010;12 pp);
- Answers to Questions on 33% RPS Implementation Analysis Preliminary Results Report (2009: 9 pp);
- SEPA Determination of Non-significance regarding zoning adjustments for Skamania

County, Washington. Second Declaration to Friends of the Columbia Gorge, Inc. and Save Our Scenic Area (Dec 2008; 17 pp);

- Comments on Draft 1A Summary Report to CAISO (2008; 10 pp);
- County of Placer's Categorical Exemption of Hilton Manor Project (2009; 9 pp);
- Protest of CARE to Amendment to the Power Purchase and Sale Agreement for Procurement of Eligible Renewable Energy Resources Between Hatchet Ridge Wind LLC and PG&E (2009; 3 pp);
- Tehachapi Renewable Transmission Project EIR/EIS (2009; 142 pp);
- Delta Shores Project EIR, south Sacramento (2009; 11 pp + addendum 2 pp);
- Declaration of Shawn Smallwood in Support of Care's Petition to Modify D.07-09-040 (2008; 3 pp);
- The Public Utility Commission's Implementation Analysis December 16 Workshop for the Governor's Executive Order S-14-08 to implement a 33% Renewable Portfolio Standard by 2020 (2008; 9 pp);
- The Public Utility Commission's Implementation Analysis Draft Work Plan for the Governor's Executive Order S-14-08 to implement a 33% Renewable Portfolio Standard by 2020 (2008; 11 pp);
- Draft 1A Summary Report to California Independent System Operator for Planning Reserve Margins (PRM) Study (2008; 7 pp.);
- SEPA Determination of Non-significance regarding zoning adjustments for Skamania County, Washington. Declaration to Friends of the Columbia Gorge, Inc. and Save Our Scenic Area (Sep 2008; 16 pp);
- California Energy Commission's Preliminary Staff Assessment of the Colusa Generating Station (2007; 24 pp);
- Rio del Oro Specific Plan Project Recirculated Draft Environmental Impact Report (2008: 66 pp);
- Replies to Response to Comments Re: Regional University Specific Plan Environmental Impact Report (2008; 20 pp);
- Regional University Specific Plan Environmental Impact Report (2008: 33 pp.);
- Clark Precast, LLC's "Sugarland" project, Negative Declaration (2008: 15 pp.);
- Cape Wind Project Draft Environmental Impact Statement (2008; 157 pp.);
- Yuba Highlands Specific Plan (or Area Plan) Environmental Impact Report (2006; 37 pp.);
- Replies to responses to comments on Mitigated Negative Declaration of the proposed Mining Permit (MIN 04-01) and Modification of Use Permit 96-02 at North Table Mountain (2006; 5 pp);
- Mitigated Negative Declaration of the proposed Mining Permit (MIN 04-01) and Modification of Use Permit 96-02 at North Table Mountain (2006; 15 pp);
- Windy Point Wind Farm Environmental Review and EIS (2006; 14 pp and 36 Powerpoint slides in reply to responses to comments);
- Shiloh I Wind Power Project EIR (2005; 18 pp);
- Buena Vista Wind Energy Project Notice of Preparation of EIR (2004; 15 pp);
- Negative Declaration of the proposed Callahan Estates Subdivision (2004; 11 pp);
- Negative Declaration of the proposed Winters Highlands Subdivision (2004; 9 pp);
- Negative Declaration of the proposed Winters Highlands Subdivision (2004; 13 pp);
- Negative Declaration of the proposed Creekside Highlands Project, Tract 7270 (2004; 21

pp);

- On the petition California Fish and Game Commission to list the Burrowing Owl as threatened or endangered (2003; 10 pp);
- Conditional Use Permit renewals from Alameda County for wind turbine operations in the Altamont Pass Wind Resource Area (2003; 41 pp);
- UC Davis Long Range Development Plan of 2003, particularly with regard to the Neighborhood Master Plan (2003; 23 pp);
- Anderson Marketplace Draft Environmental Impact Report (2003: 18 pp + 3 plates of photos);
- Negative Declaration of the proposed expansion of Temple B'nai Tikyah (2003: 6 pp);
- Antonio Mountain Ranch Specific Plan Public Draft EIR (2002: 23 pp);
- Response to testimony of experts at the East Altamont Energy Center evidentiary hearing on biological resources (2002: 9 pp);
- Revised Draft Environmental Impact Report, The Promenade (2002: 7 pp);
- Recirculated Initial Study for Calpine's proposed Pajaro Valley Energy Center (2002: 3 pp);
- UC Merced -- Declaration of Dr. Shawn Smallwood in support of petitioner's application for temporary restraining order and preliminary injunction (2002: 5 pp);
- Replies to response to comments in Final Environmental Impact Report, Atwood Ranch Unit III Subdivision (2003: 22 pp);
- Draft Environmental Impact Report, Atwood Ranch Unit III Subdivision (2002: 19 pp + 8 photos on 4 plates);
- California Energy Commission Staff Report on GWF Tracy Peaker Project (2002: 17 pp + 3 photos; follow-up report of 3 pp);
- Initial Study and Negative Declaration, Silver Bend Apartments, Placer County (2002: 13 pp);
- UC Merced Long-range Development Plan DEIR and UC Merced Community Plan DEIR (2001: 26 pp);
- Initial Study, Colusa County Power Plant (2001: 6 pp);
- Comments on Proposed Dog Park at Catlin Park, Folsom, California (2001: 5 pp + 4 photos);
- Pacific Lumber Co. (Headwaters) Habitat Conservation Plan and Environmental Impact Report (1998: 28 pp);
- Final Environmental Impact Report/Statement for Issuance of Take authorization for listed species within the MSCP planning area in San Diego County, California (Fed. Reg. 62 (60): 14938, San Diego Multi-Species Conservation Program) (1997: 10 pp);
- Permit (PRT-823773) Amendment for the Natomas Basin Habitat Conservation Plan, Sacramento, CA (Fed. Reg. 63 (101): 29020-29021) (1998);
- Draft Recovery Plan for the Giant Garter Snake (*Thamnophis gigas*). (Fed. Reg. 64(176): 49497-49498) (1999: 8 pp);
- Review of the Draft Recovery Plan for the Arroyo Southwestern Toad (*Bufo microscaphus californicus*) (1998);
- Ballona West Bluffs Project Environmental Impact Report (1999: oral presentation);
- California Board of Forestry's proposed amended Forest Practices Rules (1999);
- Negative Declaration for the Sunset Skyranch Airport Use Permit (1999);
- Calpine and Bechtel Corporations' Biological Resources Implementation and Monitoring

Program (BRMIMP) for the Metcalf Energy Center (2000: 10 pp);

- California Energy Commission's Final Staff Assessment of the proposed Metcalf Energy Center (2000);
- US Fish and Wildlife Service Section 7 consultation with the California Energy Commission regarding Calpine and Bechtel Corporations' Metcalf Energy Center (2000: 4 pp);
- California Energy Commission's Preliminary Staff Assessment of the proposed Metcalf Energy Center (2000: 11 pp);
- Site-specific management plans for the Natomas Basin Conservancy's mitigation lands, prepared by Wildlands, Inc. (2000: 7 pp);
- Affidavit of K. Shawn Smallwood in Spirit of the Sage Council, et al. (Plaintiffs) vs. Bruce Babbitt, Secretary, U.S. Department of the Interior, et al. (Defendants), Injuries caused by the No Surprises policy and final rule which codifies that policy (1999: 9 pp).

Comments on other Environmental Review Documents:

- Proposed Regulation for California Fish and Game Code Section 3503.5 (2015: 12 pp);
- Statement of Overriding Considerations related to extending Altamont Winds, Inc.'s Conditional Use Permit PLN2014-00028 (2015; 8 pp);
- Draft Program Level EIR for Covell Village (2005; 19 pp);
- Bureau of Land Management Wind Energy Programmatic EIS Scoping document (2003: 7 pp.);
- NEPA Environmental Analysis for Biosafety Level 4 National Biocontainment Laboratory (NBL) at UC Davis (2003: 7 pp);
- Notice of Preparation of UC Merced Community and Area Plan EIR, on behalf of The Wildlife Society—Western Section (2001: 8 pp.);
- Preliminary Draft Yolo County Habitat Conservation Plan (2001; 2 letters totaling 35 pp.);
- Merced County General Plan Revision, notice of Negative Declaration (2001: 2 pp.);
- Notice of Preparation of Campus Parkway EIR/EIS (2001: 7 pp.);
- Draft Recovery Plan for the bighorn sheep in the Peninsular Range (*Ovis candensis*) (2000);
- Draft Recovery Plan for the California Red-legged Frog (*Rana aurora draytonii*), on behalf of The Wildlife Society—Western Section (2000: 10 pp.);
- Sierra Nevada Forest Plan Amendment Draft Environmental Impact Statement, on behalf of The Wildlife Society—Western Section (2000: 7 pp.);
- State Water Project Supplemental Water Purchase Program, Draft Program EIR (1997);
- Davis General Plan Update EIR (2000);
- Turn of the Century EIR (1999: 10 pp);
- Proposed termination of Critical Habitat Designation under the Endangered Species Act (Fed. Reg. 64(113): 31871-31874) (1999);
- NOA Draft Addendum to the Final Handbook for Habitat Conservation Planning and Incidental Take Permitting Process, termed the HCP 5-Point Policy Plan (Fed. Reg. 64(45): 11485 - 11490) (1999; 2 pp + attachments);
- Covell Center Project EIR and EIR Supplement (1997).

Position Statements I prepared the following position statements for the Western Section of The Wildlife Society, and one for nearly 200 scientists:

- Recommended that the California Department of Fish and Game prioritize the extermination of the introduced southern water snake in northern California. The Wildlife Society--Western Section (2001);
- Recommended that The Wildlife Society—Western Section appoint or recommend members of the independent scientific review panel for the UC Merced environmental review process (2001);
- Opposed the siting of the University of California's 10th campus on a sensitive vernal pool/grassland complex east of Merced. The Wildlife Society--Western Section (2000);
- Opposed the legalization of ferret ownership in California. The Wildlife Society--Western Section (2000);
- Opposed the Proposed "No Surprises," "Safe Harbor," and "Candidate Conservation Agreement" rules, including permit-shield protection provisions (Fed. Reg. Vol. 62, No. 103, pp. 29091-29098 and No. 113, pp. 32189-32194). This statement was signed by 188 scientists and went to the responsible federal agencies, as well as to the U.S. Senate and House of Representatives.

Posters at Professional Meetings

Leyvas, E. and K. S. Smallwood. 2015. Rehabilitating injured animals to offset and rectify wind project impacts. Conference on Wind Energy and Wildlife Impacts, Berlin, Germany, 9-12 March 2015.

Smallwood, K. S., J. Mount, S. Standish, E. Leyvas, D. Bell, E. Walther, B. Karas. 2015. Integrated detection trials to improve the accuracy of fatality rate estimates at wind projects. Conference on Wind Energy and Wildlife Impacts, Berlin, Germany, 9-12 March 2015.

Smallwood, K. S. and C. G. Thelander. 2005. Lessons learned from five years of avian mortality research in the Altamont Pass WRA. AWEA conference, Denver, May 2005.

Neher, L., L. Wilder, J. Woo, L. Spiegel, D. Yen-Nakafugi, and K.S. Smallwood. 2005. Bird's eye view on California wind. AWEA conference, Denver, May 2005.

Smallwood, K. S., C. G. Thelander and L. Spiegel. 2003. Toward a predictive model of avian fatalities in the Altamont Pass Wind Resource Area. Windpower 2003 Conference and Convention, Austin, Texas.

Smallwood, K.S. and Eva Butler. 2002. Pocket Gopher Response to Yellow Star-thistle Eradication as part of Grassland Restoration at Decommissioned Mather Air Force Base, Sacramento County, California. White Mountain Research Station Open House, Barcroft Station.

Smallwood, K.S. and Michael L. Morrison. 2002. Fresno kangaroo rat (*Dipodomys nitratoides*) Conservation Research at Resources Management Area 5, Lemoore Naval Air Station. White Mountain Research Station Open House, Barcroft Station.

Smallwood, K.S. and E.L. Fitzhugh. 1989. Differentiating mountain lion and dog tracks. Third Mountain Lion Workshop, Prescott, AZ.

Smith, T. R. and K. S. Smallwood. 2000. Effects of study area size, location, season, and allometry on reported *Sorex* shrew densities. Annual Meeting of the Western Section of The Wildlife Society.

Presentations at Professional Meetings and Seminars

Mitigation of Raptor Fatalities in the Altamont Pass Wind Resource Area. Raptor Research Foundation Meeting, Sacramento, California, 6 November 2015.

From burrows to behavior: Research and management for burrowing owls in a diverse landscape. California Burrowing Owl Consortium meeting, 24 October 2015, San Jose, California.

The Challenges of repowering. Keynote presentation at Conference on Wind Energy and Wildlife Impacts, Berlin, Germany, 10 March 2015.

Research Highlights Altamont Pass 2011-2015. Scientific Review Committee, Oakland, California, 8 July 2015.

Siting wind turbines to minimize raptor collisions: Altamont Pass Wind Resource Area. US Fish and Wildlife Service Golden Eagle Working Group, Sacramento, California, 8 January 2015.

Evaluation of nest boxes as a burrowing owl conservation strategy. Sacramento Chapter of the Western Section, The Wildlife Society. Sacramento, California, 26 August 2013.

Predicting collision hazard zones to guide repowering of the Altamont Pass. Conference on wind power and environmental impacts. Stockholm, Sweden, 5-7 February 2013.

Impacts of Wind Turbines on Wildlife. California Council for Wildlife Rehabilitators, Yosemite, California, 12 November 2012.

Impacts of Wind Turbines on Birds and Bats. Madrone Audubon Society, Santa Rosa, California, 20 February 2012.

Comparing Wind Turbine Impacts across North America. California Energy Commission Staff Workshop: Reducing the Impacts of Energy Infrastructure on Wildlife, 20 July 2011.

Siting Repowered Wind Turbines to Minimize Raptor Collisions. California Energy Commission Staff Workshop: Reducing the Impacts of Energy Infrastructure on Wildlife, 20 July 2011.

Siting Repowered Wind Turbines to Minimize Raptor Collisions. Alameda County Scientific Review Committee meeting, 17 February 2011

Comparing Wind Turbine Impacts across North America. Conference on Wind energy and Wildlife impacts, Trondheim, Norway, 3 May 2011.

Update on Wildlife Impacts in the Altamont Pass Wind Resource Area. Raptor Symposium, The Wildlife Society—Western Section, Riverside, California, February 2011.

Siting Repowered Wind Turbines to Minimize Raptor Collisions. Raptor Symposium, The Wildlife

Society - Western Section, Riverside, California, February 2011.

Wildlife mortality caused by wind turbine collisions. Ecological Society of America, Pittsburgh, Pennsylvania, 6 August 2010.

Map-based repowering and reorganization of a wind farm to minimize burrowing owl fatalities. California burrowing Owl Consortium Meeting, Livermore, California, 6 February 2010.

Environmental barriers to wind power. Getting Real About Renewables: Economic and Environmental Barriers to Biofuels and Wind Energy. A symposium sponsored by the Environmental & Energy Law & Policy Journal, University of Houston Law Center, Houston, 23 February 2007.

Lessons learned about bird collisions with wind turbines in the Altamont Pass and other US wind farms. Meeting with Japan Ministry of the Environment and Japan Ministry of the Economy, Wild Bird Society of Japan, and other NGOs Tokyo, Japan, 9 November 2006.

Lessons learned about bird collisions with wind turbines in the Altamont Pass and other US wind farms. Symposium on bird collisions with wind turbines. Wild Bird Society of Japan, Tokyo, Japan, 4 November 2006.

Responses of Fresno kangaroo rats to habitat improvements in an adaptive management framework. California Society for Ecological Restoration (SERCAL) 13th Annual Conference, UC Santa Barbara, 27 October 2006.

Fatality associations as the basis for predictive models of fatalities in the Altamont Pass Wind Resource Area. EEI/APLIC/PIER Workshop, 2006 Biologist Task Force and Avian Interaction with Electric Facilities Meeting, Pleasanton, California, 28 April 2006.

Burrowing owl burrows and wind turbine collisions in the Altamont Pass Wind Resource Area. The Wildlife Society - Western Section Annual Meeting, Sacramento, California, February 8, 2006.

Mitigation at wind farms. Workshop: Understanding and resolving bird and bat impacts. American Wind Energy Association and Audubon Society. Los Angeles, CA. January 10 and 11, 2006.

Incorporating data from the California Wildlife Habitat Relationships (CWHR) system into an impact assessment tool for birds near wind farms. Shawn Smallwood, Kevin Hunting, Marcus Yee, Linda Spiegel, Monica Parisi. Workshop: Understanding and resolving bird and bat impacts. American Wind Energy Association and Audubon Society. Los Angeles, CA. January 10 and 11, 2006.

Toward indicating threats to birds by California's new wind farms. California Energy Commission, Sacramento, May 26, 2005.

Avian collisions in the Altamont Pass. California Energy Commission, Sacramento, May 26, 2005.

Ecological solutions for avian collisions with wind turbines in the Altamont Pass Wind Resource Area. EPRI Environmental Sector Council, Monterey, California, February 17, 2005.

Ecological solutions for avian collisions with wind turbines in the Altamont Pass Wind Resource Area. The Wildlife Society—Western Section Annual Meeting, Sacramento, California, January 19, 2005.

Associations between avian fatalities and attributes of electric distribution poles in California. The Wildlife Society - Western Section Annual Meeting, Sacramento, California, January 19, 2005.

Minimizing avian mortality in the Altamont Pass Wind Resources Area. UC Davis Wind Energy Collaborative Forum, Palm Springs, California, December 14, 2004.

Selecting electric distribution poles for priority retrofitting to reduce raptor mortality. Raptor Research Foundation Meeting, Bakersfield, California, November 10, 2004.

Responses of Fresno kangaroo rats to habitat improvements in an adaptive management framework. Annual Meeting of the Society for Ecological Restoration, South Lake Tahoe, California, October 16, 2004.

Lessons learned from five years of avian mortality research at the Altamont Pass Wind Resources Area in California. The Wildlife Society Annual Meeting, Calgary, Canada, September 2004.

The ecology and impacts of power generation at Altamont Pass. Sacramento Petroleum Association, Sacramento, California, August 18, 2004.

Burrowing owl mortality in the Altamont Pass Wind Resource Area. California Burrowing Owl Consortium meeting, Hayward, California, February 7, 2004.

Burrowing owl mortality in the Altamont Pass Wind Resource Area. California Burrowing Owl Symposium, Sacramento, November 2, 2003.

Raptor Mortality at the Altamont Pass Wind Resource Area. National Wind Coordinating Committee, Washington, D.C., November 17, 2003.

Raptor Behavior at the Altamont Pass Wind Resource Area. Annual Meeting of the Raptor Research Foundation, Anchorage, Alaska, September, 2003.

Raptor Mortality at the Altamont Pass Wind Resource Area. Annual Meeting of the Raptor Research Foundation, Anchorage, Alaska, September, 2003.

California mountain lions. Ecological & Environmental Issues Seminar, Department of Biology, California State University, Sacramento, November, 2000.

Intra- and inter-turbine string comparison of fatalities to animal burrow densities at Altamont Pass. National Wind Coordinating Committee, Carmel, California, May, 2000.

Using a Geographic Positioning System (GPS) to map wildlife and habitat. Annual Meeting of the Western Section of The Wildlife Society, Riverside, CA, January, 2000.

Suggested standards for science applied to conservation issues. Annual Meeting of the Western Section of The Wildlife Society, Riverside, CA, January, 2000.

The indicators framework applied to ecological restoration in Yolo County, California. Society for Ecological Restoration, September 25, 1999.

Ecological restoration in the context of animal social units and their habitat areas. Society for Ecological Restoration, September 24, 1999.

Relating Indicators of Ecological Health and Integrity to Assess Risks to Sustainable Agriculture and Native Biota. International Conference on Ecosystem Health, August 16, 1999.

A crosswalk from the Endangered Species Act to the HCP Handbook and real HCPs. Southern California Edison, Co. and California Energy Commission, March 4-5, 1999.

Mountain lion track counts in California: Implications for Management. Ecological & Environmental Issues Seminar, Department of Biological Sciences, California State University, Sacramento, November 4, 1998.

"No Surprises" -- Lack of science in the HCP process. California Native Plant Society Annual Conservation Conference, The Presidio, San Francisco, September 7, 1997.

In Your Interest. A half hour weekly show aired on Channel 10 Television, Sacramento. In this episode, I served on a panel of experts discussing problems with the implementation of the Endangered Species Act. Aired August 31, 1997.

Spatial scaling of pocket gopher (*Geomyidae*) density. Southwestern Association of Naturalists 44th Meeting, Fayetteville, Arkansas, April 10, 1997.

Estimating prairie dog and pocket gopher burrow volume. Southwestern Association of Naturalists 44th Meeting, Fayetteville, Arkansas, April 10, 1997.

Ten years of mountain lion track survey. Fifth Mountain Lion Workshop, San Diego, February 27, 1996.

Study and interpretive design effects on mountain lion density estimates. Fifth Mountain Lion Workshop, San Diego, February 27, 1996.

Small animal control. Session moderator and speaker at the California Farm Conference, Sacramento, California, Feb. 28, 1995.

Small animal control. Ecological Farming Conference, Asylomar, California, Jan. 28, 1995.

Habitat associations of the Swainson's Hawk in the Sacramento Valley's agricultural landscape. 1994 Raptor Research Foundation Meeting, Flagstaff, Arizona.

Alfalfa as wildlife habitat. Seed Industry Conference, Woodland, California, May 4, 1994.

Habitats and vertebrate pests: impacts and management. Managing Farmland to Bring Back Game Birds and Wildlife to the Central Valley. Yolo County Resource Conservation District, U.C. Davis, February 19, 1994.

Management of gophers and alfalfa as wildlife habitat. Orland Alfalfa Production Meeting and Sacramento Valley Alfalfa Production Meeting, February 1 and 2, 1994.

Patterns of wildlife movement in a farming landscape. Wildlife and Fisheries Biology Seminar Series: Recent Advances in Wildlife, Fish, and Conservation Biology, U.C. Davis, Dec. 6, 1993.

Alfalfa as wildlife habitat. California Alfalfa Symposium, Fresno, California, Dec. 9, 1993.

Management of pocket gophers in Sacramento Valley alfalfa. California Alfalfa Symposium, Fresno, California, Dec. 8, 1993.

Association analysis of raptors in a farming landscape. Plenary speaker at Raptor Research Foundation Meeting, Charlotte, North Carolina, Nov. 6, 1993.

Landscape strategies for biological control and IPM. Plenary speaker, International Conference on Integrated Resource Management and Sustainable Agriculture, Beijing, China, Sept. 11, 1993.

Landscape Ecology Study of Pocket Gophers in Alfalfa. Alfalfa Field Day, U.C. Davis, July 1993.

Patterns of wildlife movement in a farming landscape. Spatial Data Analysis Colloquium, U.C. Davis, August 6, 1993.

Sound stewardship of wildlife. Veterinary Medicine Seminar: Ethics of Animal Use, U.C. Davis. May 1993.

Landscape ecology study of pocket gophers in alfalfa. Five County Grower's Meeting, Tracy, California. February 1993.

Turbulence and the community organizers: The role of invading species in ordering a turbulent system, and the factors for invasion success. Ecology Graduate Student Association Colloquium, U.C. Davis. May 1990.

Evaluation of exotic vertebrate pests. Fourteenth Vertebrate Pest Conference, Sacramento, California. March 1990.

Analytical methods for predicting success of mammal introductions to North America. The Western Section of the Wildlife Society, Hilo, Hawaii. February 1988.

A state-wide mountain lion track survey. Sacramento County Dept Parks and Recreation. April 1986.

The mountain lion in California. Davis Chapter of the Audubon Society. October 1985.

Ecology Graduate Student Seminars, U.C. Davis, 1985-1990: Social behavior of the mountain lion;

Mountain lion control; Political status of the mountain lion in California.

Other forms of Participation at Professional Meetings

- Scientific Committee, Conference on Wind energy and Wildlife impacts, Berlin, Germany, March 2015.

- Scientific Committee, Conference on Wind energy and Wildlife impacts, Stockholm, Sweden, February 2013.

- Workshop co-presenter at Birds & Wind Energy Specialist Group (BAWESG) Information sharing week, Bird specialist studies for proposed wind energy facilities in South Africa, Endangered Wildlife Trust, Darling, South Africa, 3-7 October 2011.

- Scientific Committee, Conference on Wind energy and Wildlife impacts, Trondheim, Norway, 2-5 May 2011.

- Chair of Animal Damage Management Session, The Wildlife Society, Annual Meeting, Reno, Nevada, September 26, 2001.

- Chair of Technical Session: Human communities and ecosystem health: Comparing perspectives and making connection. Managing for Ecosystem Health, International Congress on Ecosystem Health, Sacramento, CA August 15-20, 1999.

- Student Awards Committee, Annual Meeting of the Western Section of The Wildlife Society, Riverside, CA, January, 2000.

- Student Mentor, Annual Meeting of the Western Section of The Wildlife Society, Riverside, CA, January, 2000.

Printed Mass Media

Smallwood, K.S., D. Mooney, and M. McGuinness. 2003. We must stop the UCD biolab now. Op-Ed to the Davis Enterprise.

Smallwood, K.S. 2002. Spring Lake threatens Davis. Op-Ed to the Davis Enterprise.

Smallwood, K.S. Summer, 2001. Mitigation of habitation. The Flatlander, Davis, California.

Entrikan, R.K. and K.S. Smallwood. 2000. Measure O: Flawed law would lock in new taxes. Op-Ed to the Davis Enterprise.

Smallwood, K.S. 2000. Davis delegation lobbies Congress for Wildlife conservation. Op-Ed to the Davis Enterprise.

Smallwood, K.S. 1998. Davis Visions. The Flatlander, Davis, California.

Smallwood, K.S. 1997. Last grab for Yolo's land and water. The Flatlander, Davis, California.

Smallwood, K.S. 1997. The Yolo County HCP. Op-Ed to the Davis Enterprise.

Radio/Television

PBS News Hour,

FOX News, Energy in America: Dead Birds Unintended Consequence of Wind Power Development, August 2011.

KXJZ Capital Public Radio -- Insight (Host Jeffrey Callison). Mountain lion attacks (with guest Professor Richard Coss). 23 April 2009;

KXJZ Capital Public Radio -- Insight (Host Jeffrey Callison). Wind farm Rio Vista Renewable Power. 4 September 2008;

KQED QUEST Episode #111. Bird collisions with wind turbines. 2007;

KDVS Speaking in Tongues (host Ron Glick), Yolo County HCP: 1 hour. December 27, 2001;

KDVS Speaking in Tongues (host Ron Glick), Yolo County HCP: 1 hour. May 3, 2001;

KDVS Speaking in Tongues (host Ron Glick), Yolo County HCP: 1 hour. February 8, 2001;

KDVS Speaking in Tongues (host Ron Glick & Shawn Smallwood), California Energy Crisis: 1 hour. Jan. 25, 2001;

KDVS Speaking in Tongues (host Ron Glick), Headwaters Forest HCP: 1 hour. 1998;

Davis Cable Channel (host Gerald Heffernon), Burrowing owls in Davis: half hour. June, 2000;

Davis Cable Channel (hosted by Davis League of Women Voters), Measure O debate: 1 hour. October, 2000;

KXTV 10, In Your Interest, The Endangered Species Act: half hour. 1997.

Reviews of Journal Papers (Scientific journals for whom I've provided peer review)

Journal	**Journal**
American Naturalist	Journal of Animal Ecology
Journal of Wildlife Management	Western North American Naturalist
Auk	Journal of Raptor Research
Biological Conservation	National Renewable Energy Lab reports
Canadian Journal of Zoology	Oikos
Ecosystem Health	The Prairie Naturalist
Environmental Conservation	Restoration Ecology
Environmental Management	Southwestern Naturalist
Functional Ecology	The Wildlife Society--Western Section Trans.
Journal of Zoology (London)	Proc. Int. Congress on Managing for Ecosystem Health
Journal of Applied Ecology	Transactions in GIS
Ecology	Tropical Ecology
Biological Control	The Condor

Committees

- Scientific Review Committee, Alameda County, Altamont Pass Wind Resource Area
- Ph.D. Thesis Committee, Steve Anderson, University of California, Davis
- MS Thesis Committee, Marcus Yee, California State University, Sacramento

Other Professional Activities or Products

Testified in Federal Court in Denver during 2005 over the fate of radio-nuclides in the soil at Rocky Flats Plant after exposure to burrowing animals. My clients won a judgment of $553,000,000. I have also testified in many other cases of litigation under CEQA, NEPA, the Warren-Alquist Act, and other environmental laws. My clients won most of the cases for which I testified.

Testified before Environmental Review Tribunals in Ontario, Canada regarding proposed White Pines and Amherst Island Wind Energy projects.

Testified in Skamania County Hearing in 2009 on the potential impacts of zoning the County for development of wind farms and hazardous waste facilities.

Testified in deposition in 2007 in the case of O'Dell et al. vs. FPL Energy in Houston, Texas.

Testified in Klickitat County Hearing in 2006 on the potential impacts of the Windy Point Wind Farm.

Memberships in Professional Societies

The Wildlife Society
Raptor Research Foundation

Honors and Awards

Fulbright Research Fellowship to Indonesia, 1987
J.G. Boswell Full Academic Scholarship, 1981 college of choice
Certificate of Appreciation, The Wildlife Society—Western Section, 2000, 2001
Northern California Athletic Association Most Valuable Cross Country Runner, 1984
American Legion Award, Corcoran High School, 1981, and John Muir Junior High, 1977
CIF Section Champion, Cross Country in 1978
CIF Section Champion, Track & Field 2 mile run in 1981
National Junior Record, 20 kilometer run, 1982
National Age Group Record, 1500 meter run, 1978

Community Activities

District 64 Little League Umpire, 2003-2007
Dixon Little League Umpire, 2006-07
Davis Little League Chief Umpire and Board member, 2004-2005
Davis Little League Safety Officer, 2004-2005
Davis Little League Certified Umpire, 2002-2004
Davis Little League Scorekeeper, 2002
Davis Visioning Group member
Petitioner for Writ of Mandate under the California Environmental Quality Act against City of Woodland decision to approve the Spring Lake Specific Plan, 2002
Served on campaign committees for City Council candidates

Exhibit F

SWAPE Technical Consultation, Data Analysis and Litigation Support for the Environment

2656 29th Street, Suite 201
Santa Monica, CA 90405

Matt Hagemann, P.G, C.Hg.
(949) 887-9013
mhagemann@swape.com

Paul E. Rosenfeld, PhD
(310) 795-2335
prosenfeld@swape.com

September 10, 2020

Richard Drury
Lozeau | Drury LLP
1939 Harrison Street, Suite 150
Oakland, CA 94618

Subject: Comments on UCSF Comprehensive Parnassus Heights Plan (SCH No. 2020010175)

Dear Mr. Drury,

We have reviewed the July 2020 Draft Environmental Impact Report ("DEIR") for the UCSF Comprehensive Parnassus Heights Plan ("Project") located in the City of San Francisco ("City"). The Project proposes to demolish 287,000-SF of existing buildings and construct the Irving Street Arrival Project, which includes 25,000-SF of multi-story vertical circulation space; a 270,000-SF Research and Academic Building ("RAB"); a 955,000-SF New Hospital; and the Initial Aldea Housing Densification, including 184 residential dwelling units and 184 parking spaces, all on the 107-acre Project site.

Our review concludes that the DEIR fails to adequately evaluate the Project's air quality, health risk, and greenhouse gas impacts. As a result, emissions and health risk impacts associated with construction and operation of the proposed Project are underestimated and inadequately addressed. An updated EIR should be prepared to adequately assess and mitigate the potential air quality, health risk, and greenhouse gas impacts that the project may have on the surrounding environment.

Air Quality

Unsubstantiated Input Parameters Used to Estimate Project Emissions

The DEIR's air quality analysis relies on emissions calculated with CalEEMod.2016.3.2.[1] CalEEMod provides recommended default values based on site-specific information, such as land use type,

[1] CAPCOA (November 2017) CalEEMod User's Guide, http://www.aqmd.gov/docs/default-source/caleemod/01_user-39-s-guide2016-3-2_15november2017.pdf?sfvrsn=4.

meteorological data, total lot acreage, project type and typical equipment associated with project type. If more specific project information is known, the user can change the default values and input project-specific values, but the California Environmental Quality Act ("CEQA") requires that such changes be justified by substantial evidence.[2] Once all of the values are inputted into the model, the Project's construction and operational emissions are calculated, and "output files" are generated. These output files disclose to the reader what parameters were utilized in calculating the Project's air pollutant emissions and make known which default values were changed as well as provide justification for the values selected.[3]

Review of the Project's air modeling demonstrates that the DEIR underestimates emissions associated with Project activities. As previously stated, the DEIR's air quality analysis relies on air pollutant emissions calculated using CalEEMod. When reviewing the Project's CalEEMod output files, provided as Appendix AIR to the DEIR, we found that several model inputs were not consistent with information disclosed in the DEIR. As a result, the Project's construction and operational emissions are underestimated. An updated EIR should be prepared to include an updated air quality analysis that adequately evaluates the impacts that construction and operation of the Project will have on local and regional air quality.

Unsubstantiated Utility Company and Intensity Factors

Review of the Project's CalEEMod output files demonstrates that the utility company was modeled as "User Defined" with a manually-inputted CO_2 intensity factor of 605.78 pounds per megawatt hour ("lbs/MWh"), a CH_4 intensity factor of 0 lbs/MWh, and an N_20 intensity factor of 0 lbs/MWh (see excerpt below) (Appendix AIR, pp. 1172, 1250, 1264, 1282, 1357, 1371).

Utility Company	User Defined				
CO2 Intensity (lb/MWhr)	605.78	CH4 Intensity (lb/MWhr)	0	N2O Intensity (lb/MWhr)	0

As previously mentioned, the CalEEMod User's Guide requires any changes to model defaults be justified.[4] According to the "User Entered Comments & Non-Default Data" table, the CO_2, CH_4, and N_20 intensity factors reflect the "UCSF specific CO2 EF prior to 2025 net zero" (Appendix AIR, pp. 1250). However, this is incorrect for two (2) reasons. First, this justification fails to provide a source for the intensity factors assumed by the model and as a result, we cannot verify the updated intensity factors. Second, the CH_4 and N_20 were *not* inputted and instead incorrectly left as 0 lbs/MWh. According to the CalEEMod User's Guide:

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[2] CAPCOA (November 2017) CalEEMod User's Guide, http://www.aqmd.gov/docs/default-source/caleemod/01_user-39-s-guide2016-3-2_15november2017.pdf?sfvrsn=4, p. 1, 9.
[3] CAPCOA (November 2017) CalEEMod User's Guide, http://www.aqmd.gov/docs/default-source/caleemod/01_user-39-s-guide2016-3-2_15november2017.pdf?sfvrsn=4, fn 1, p. 11, 12 – 13. A key feature of the CalEEMod program is the "remarks" feature, where the user explains why a default setting was replaced by a "user defined" value. These remarks are included in the report.
[4] CalEEMod User Guide, *available at:* http://www.aqmd.gov/docs/default-source/caleemod/01_user-39-s-guide2016-3-2_15november2017.pdf?sfvrsn=4, p. 2, 9

> "[I]f the utility for the project is not in the drop down list, the user may select User Defined and *the user will need to manually enter the various intensity factors*" (emphasis added).[5]

As you can see in the excerpt above, if "User Defined" is selected as the utility company, the CO_2, CH_4, and N_20 intensity factors should be manually inputted. Here, however, the CH_4 and N_20 values were incorrectly left as 0 lbs/MWh. Inputting an unsupported CO_2 intensity factor, as well as failing to input CH_4 and N_20 intensity factors, presents an issue, as CalEEMod uses the CO_2, CH_4, and N_20 intensity factors to calculate the Project's greenhouse gas ("GHG") emissions associated with electricity use. [6] As a result, the models may underestimate the Project's GHG emissions and should not be relied upon to determine Project significance.

Failure to Include All Proposed Land Uses

According to the DEIR, the Project would include a temporary construction office between 25,000- and 45,000-SF in size (p. 3-27). However, review of the Project's CalEEMod output files demonstrates that this land use was not modeled or evaluated whatsoever (Appendix AIR, pp. 1085, 1112, 1146, 1172, 1297, 1327, 1357, 1371). This presents an issue, as the land use type and size features are used throughout CalEEMod to determine default variable and emission factors that go into the model's calculations.[7] For example, the square footage of a land use is used for certain calculations such as determining the wall space to be painted (i.e., VOC emissions from architectural coatings) and volume that is heated or cooled (i.e., energy impacts). Furthermore, CalEEMod assigns each land use type with its own set of energy usage emission factors.[8] Thus, by failing to include the proposed temporary construction office in any of the CalEEMod models, the DEIR fails to account for the Project's construction-related and operational emissions associated with this land use and should not be relied upon to determine Project significance.

Failure to Model Parking

According to the DEIR, the Initial Aldea Housing Densification component of the Project would include one parking space per unit (p. 3-28). Given that the Initial Aldea Housing Densification includes 184 student housing units, the corresponding model should have included 184 parking spaces (p. 3-28).[9] However, review of the Project's CalEEMod output files demonstrates that the models fail to include any amount of parking (see excerpt below) (Appendix AIR, pp. 1085, 1357).

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area
Apartments High Rise	184.00	Dwelling Unit	2.97	184,000.00

[5] CalEEMod User Guide, *available at:* http://www.caleemod.com/, p. 17.
[6] "CalEEMod User's Guide." CAPCOA, November 2017, *available at:* CalEEMod.com, p. 17.
[7] "CalEEMod User's Guide." CAPCOA, November 2017, *available at:* http://www.aqmd.gov/docs/default-source/caleemod/upgrades/2016.3/01_user-39-s-guide2016-3-1.pdf?sfvrsn=2, p. 17
[8] "CalEEMod User's Guide, Appendix D." CAPCOA, September 2016, *available at:* http://www.aqmd.gov/docs/default-source/caleemod/upgrades/2016.3/05_appendix-d2016-3-1.pdf?sfvrsn=2
[9] Calculated: (184 residential units) * (1 parking space per residential unit) = 184 parking spaces.

This presents an issue, as the land use type and size features are used throughout CalEEMod to determine default variable and emission factors that go into the model's calculations.[10] For example, the square footage of a land use is used for certain calculations such as determining the wall space to be painted (i.e., VOC emissions from architectural coatings) and volume that is heated or cooled (i.e., energy impacts). Furthermore, CalEEMod assigns each land use type with its own set of energy usage emission factors.[11] Thus, by failing to include the proposed parking associated with the Initial Aldea Housing Densification, the models underestimate the Project's construction-related and operational emissions and should not be relied upon to determine Project significance.

Incorrect Land Use Sizes

According to the DEIR, 24,000-SF of demolition would be required for the construction of new student housing structures associated with the Initial Aldea Housing Densification component of the Project (p. 3-37). Thus, the "Existing Emissions Aldea Housing Initial Phase Demolition" should have included 24,000-SF of residential land use space to be demolished. However, review of the Project's CalEEMod output files demonstrates that the "Existing Emissions Aldea Housing Initial Phase Demolition" model incorrectly includes 145,000-SF of "Research & Development" land use space (see excerpt below) (Appendix AIR, pp. 1282).

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area
Research & Development	145.00	1000sqft	3.33	145,000.00

As you can see in the excerpt above, the existing land use to be demolished for the Initial Aldea Housing Densification is overestimated in size and modeled using an incorrect land use type. This presents an issue, as the land use type and size features are used throughout CalEEMod to determine default variable and emission factors that go into the model's calculations.[12] For example, the square footage of a land use is used for certain calculations such as determining the wall space to be painted (i.e., VOC emissions from architectural coatings) and volume that is heated or cooled (i.e., energy impacts). Furthermore, CalEEMod assigns each land use type with its own set of energy usage emission factors.[13] By including an overestimated existing land use size and incorrect land use type, the model overestimates the emissions associated with the existing land use. As a result, the DEIR may *underestimate the net increase* in operational emissions resulting from the Initial Aldea Housing Densification component of the Project and the air quality significance determination should not be relied upon.

[10] "CalEEMod User's Guide." CAPCOA, November 2017, *available at:* http://www.aqmd.gov/docs/default-source/caleemod/upgrades/2016.3/01_user-39-s-guide2016-3-1.pdf?sfvrsn=2, p. 17
[11] "CalEEMod User's Guide, Appendix D." CAPCOA, September 2016, *available at:* http://www.aqmd.gov/docs/default-source/caleemod/upgrades/2016.3/05_appendix-d2016-3-1.pdf?sfvrsn=2
[12] "CalEEMod User's Guide." CAPCOA, November 2017, *available at:* http://www.aqmd.gov/docs/default-source/caleemod/upgrades/2016.3/01_user-39-s-guide2016-3-1.pdf?sfvrsn=2, p. 17
[13] "CalEEMod User's Guide, Appendix D." CAPCOA, September 2016, *available at:* http://www.aqmd.gov/docs/default-source/caleemod/upgrades/2016.3/05_appendix-d2016-3-1.pdf?sfvrsn=2

Incorrect Operational Land Use Types & Sizes

Review of the Project's CalEEMod output files demonstrates that the land use types and sizes were inputted incorrectly into the Project's four (4) operational models. Specifically, review of the "CPHP Operational Existing" model demonstrates that that *all* of the Project's existing land use space was modeled as "Hospital" (see excerpt below) (Appendix AIR, pp. 1217).

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Hospital	3,900.00	1000sqft	89.53	3,900,000.00	0

As you can see in the excerpt above, all 3,900,000-SF of the existing land use space was modeled as "Hospital" in the "CPHP Operational Existing" model. Second, review of the "CPHP Operational CPHP Campus Wide 2050" model demonstrates that *all* of the Project's land use space was again modeled as "Hospital" (see excerpt below) (Appendix AIR, pp. 1297).

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Hospital	6,000.00	1000sqft	137.74	6,000,000.00	0

As you can see in the excerpt above, all 6,000,000-SF of the land use space was modeled as "Hospital" in the "CPHP Operational CPHP Campus Wide 2050" model. Third, review of the "CPHP Operational 2050 No Project" model demonstrates that *all* of the Project's land use space was again modeled as "Hospital" (see excerpt below) (Appendix AIR, pp. 1387).

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Hospital	3,900.00	1000sqft	89.53	3,900,000.00	0

As you can see in the excerpt above, all 3,900,000-SF of the land use space was modeled as "Hospital" in the "CPHP Operational 2050 No Project" model. However, modeling *all* of the proposed and existing Projects' 3.9 million and 6 million square feet of land use space, respectfully, as "Hospital" in these three (3) operational models is incorrect. According to the DEIR:

> "Currently, there is approximately 3.92 million gsf of building space on the campus site. The total amount of campus building space upon full implementation of the CPHP would be approximately 5.97 million gsf (*including instruction, research, clinical, and support space; housing; and structured parking*), when accounting for existing campus site development, demolition, and proposed new development" (emphasis added) (p. 2-2 – 2-3).

As you can see in the excerpt above, modeling the *entirety* of the existing and proposed Projects' operational space as "Hospital" is incorrect and unsubstantiated. Instead, these models should have included *all* of the land use spaces described, including Housing, University/College, Library, Parking, Hospital, Medical Office Building, and Research and Development space.

Furthermore, review of the "UCSF Initial Phase Projects Operational" model demonstrates that the model only includes a total of 270,000-SF of "Research & Development" land use space and 142,000-SF of "Apartments High Rise" land use space (see excerpt below) (Appendix AIR, pp. 1327).

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Research & Development	270.00	1000sqft	2.50	270,000.00	0
Apartments High Rise	142.00	Dwelling Unit	2.29	142,000.00	406

As you can see in the excerpt above, that the model only includes a total of 270,000-SF of "Research & Development" land use space and 142,000-SF of "Apartments High Rise" land use space *in total*. However, only including these two (2) land use types for the Project's Initial Phase is incorrect. Specifically, according to the DEIR:

> "The Plan includes an "Initial Phase" that comprises: 1) Irving Street Arrival improvements, 2) RAB, 3) New Hospital, and 4) initial Aldea Housing Densification, and as well as other Initial Phase improvements. The Initial Phase would account for approximately 1.43 million gsf of new building development" (p. 2-3).

As you can see in the excerpt above, the Project's Initial Phase comprises a total of approximately 1.43 million gsf of new development, including Hospital, Research & Development, Residential, and Parking land use space. However, as previously described, the "UCSF Initial Phase Projects Operational" model only includes a *total* of 412,000-SF, comprised of *only* Research & Development and Residential space. This is incorrect, as the model underestimates the proposed Project's Initial Phase's land use space by approximately 1,018,000-SF and fails to include any Hospital or Parking space.

The incorrect land use type and size inputs throughout these four (4) models present an issue, as the land use type and size features are used throughout CalEEMod to determine default variable and emission factors that go into the model's calculations.[14] The square footage of a land use is used for certain calculations such as determining the wall space to be painted (i.e., VOC emissions from architectural coatings) and volume that is heated or cooled (i.e., energy impacts). By underestimating the floor surface area and failing to model the correct land use types as indicated by the DEIR, the models may underestimate the Project's construction-related and operational emissions and should not be relied upon to determine Project significance.

Unsubstantiated Changes to Construction Phase Lengths

The Project's CalEEMod output files demonstrate that three (3) of the models include unsubstantiated changes to the Project's anticipated individual construction phase lengths. As a result, the models may underestimate the Project's construction-related emissions.

First, the "New Hospital Construction" model includes five (5) changes to the Project's anticipated construction schedule (see excerpt below) (Appendix AIR, pp. 1113-1114).

New Hospital Construction, Annual:

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10.00	521.00

[14] "CalEEMod User's Guide." CAPCOA, November 2017, *available at:* http://www.caleemod.com/, p. 18.

tblConstructionPhase	NumDays	200.00	522.00
tblConstructionPhase	NumDays	200.00	1,043.00
tblConstructionPhase	NumDays	4.00	152.00
tblConstructionPhase	NumDays	2.00	152.00

Specifically, the architectural coating phase was increased by approximately 5,110%, from the default value of 10 to 521 days; the "Foundations/Concrete Pour" building construction phase was increased by approximately 161%, from the default value of 200 to 522 days; the "Building Construction" phase was increased by approximately 422%, from the default value of 200 to 1,043 days; the grading phase was increased by approximately 3,700%, from the default value of 4 to 152 days; and the site preparation phase was increased by approximately 7,500%, from the default value of 2 to 152 days.

Second, the "UCSF Irving Street Arrival Construction Only" model includes five (5) changes to the Project's anticipated construction schedule (see excerpt below) (Appendix AIR, pp. 1147-1148).

UCSF Irving Street Arrival Construction Only, Annual:

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10.00	66.00
tblConstructionPhase	NumDays	5.00	132.00
tblConstructionPhase	NumDays	1.00	66.00
tblConstructionPhase	NumDays	100.00	326.00
tblConstructionPhase	NumDays	5.00	152.00

Specifically, the architectural coating phase was increased by approximately 2,940%, from the default value of 5 to 152 days; the building construction phase was increased by approximately 226%, from the default value of 100 to 326 days; the paving phase was increased by approximately 2,540% from 5 to 132 days; the grading phase was increased by approximately 560%, from the default value of 10 to 66 days; and the site preparation phase was increased by approximately 6,500%, from the default value of 1 to 66 days.

Third, the "UCSF CPHP RAB Construction" model includes six (6) changes to the Project's anticipated construction schedule (see excerpt below) (Appendix D, pp. 1173-1174).

UCSF CPHP RAB Construction, Annual:

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10.00	523.00
tblConstructionPhase	NumDays	220.00	130.00
tblConstructionPhase	NumDays	220.00	675.00
tblConstructionPhase	NumDays	20.00	66.00
tblConstructionPhase	NumDays	6.00	219.00
tblConstructionPhase	NumDays	3.00	66.00

Specifically, the architectural coating phase was increased by approximately 5,130%, from the default value of 10 to 523 days; the "Foundations/Concrete Pour" building construction phase was decreased by approximately 41%, from the default value of 220 to 130 days; the "Building Construction" phase was increased by approximately 207%, from the default value of 220 to 675 days; the grading phase was increased by approximately 3,550%, from the default value of 6 to 219 days; the site preparation phase was increased by approximately 2,100%, from the default value of 3 to 66 days; and the demolition phase was increased by approximately 230%, from the default value of 20 to 66 days.

Thus, as you can see in the excerpts above, the "New Hospital Construction" model, the "UCSF Irving Street Arrival Construction Only" model, and the "UCSF CPHP RAB Construction" model contain several unsubstantiated changes to the individual construction phase lengths. As previously mentioned, the CalEEMod User's Guide requires any changes to model defaults be justified.[15] According to the corresponding "User Entered & Comments & Non-Default Data" tables for the models, the justifications provided for these changes are: "Construction Schedule per applicants RFI response. LPPI Demo in 2014 LRDP," Construction schedule per applicant RFI response," and "Construction schedule provided by applicant," respectively (Appendix AIR, pp. 1112, 1146, 1172). However, the DEIR and associated documents fail to disclose the referenced RFI response, as indicated by the above justifications, or the Project's anticipated construction schedule, including individual phase lengths. Furthermore, while the DEIR mentions the tentative start and end date of each Project component, the DEIR fails to provide the specific *individual construction phase lengths* (p. 3-36 – 3-37). As a result, we cannot verify the reivsed construction schedules and individual construction phase lengths included in the models.

These unsubstantiated changes improperly spread out construction emissions over a longer period than is expected for the Project, which results in an underestimation of the maximum daily emissions associated with construction. In addition, according to the CalEEMod User's Guide, each construction phase is associated with different emissions activities (see excerpt below).[16]

> *Demolition* involves removing buildings or structures.
>
> *Site Preparation* involves clearing vegetation (grubbing and tree/stump removal) and removing stones and other unwanted material or debris prior to grading.
>
> *Grading* involves the cut and fill of land to ensure that the proper base and slope is created for the foundation.
>
> *Building Construction* involves the construction of the foundation, structures and buildings.
>
> *Architectural Coating* involves the application of coatings to both the interior and exterior of buildings or structures, the painting of parking lot or parking garage striping, associated signage and curbs, and the painting of the walls or other components such as stair railings inside parking structures.
>
> *Paving* involves the laying of concrete or asphalt such as in parking lots, roads, driveways, or sidewalks.

[15] CalEEMod User Guide, *available at:* http://www.aqmd.gov/docs/default-source/caleemod/01_user-39-s-guide2016-3-2_15november2017.pdf?sfvrsn=4, p. 2, 9

[16] "CalEEMod User's Guide." CAPCOA, November 2017, *available at:* http://www.aqmd.gov/docs/default-source/caleemod/01_user-39-s-guide2016-3-2_15november2017.pdf?sfvrsn=4, p. 31.

As such, by disproportionately altering individual construction phase lengths without proper justification, the models' calculations are altered and underestimate emissions. Thus, by including unsubstantiated changes to the Project's anticipated individual construction phase lengths, the model may underestimate the Project's maximum daily construction-related emissions and should not be relied upon to determine the significance of the Project's air quality impacts.

Failure to Include Total Amount of Demolition

According to the DEIR, 254,000-SF of demolition would be required for the construction of the proposed RAB component of the Project (p. 3-37). However, review of the Project's "UCSF CPHP RAB Construction" CalEEMod model demonstrates that the model fails to include the total amount of required demolition for RAB construction. As a result, the model underestimates the Project's construction-related emissions and should not be relied upon to determine Project significance.

According to the CalEEMod User's Guide, "[h]aul trips are based on the amount of material that is demolished, imported or exported assuming a truck can handle 16 cubic yards of material."[17] Therefore, the air model calculates a default number of hauling trips based upon the amount of demolition material inputted into the model. Inputting 254,000-SF of building demolition would result in a default demolition hauling truck trip number of 1,155 trips. However, review of the Project's "UCSF CPHP RAB Construction" CalEEMod output files demonstrates that the model calculated a default value of only 1,060 hauling truck trips (see excerpt below) (Appendix AIR, pp. 1179).

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length
Demolition	5	13.00	0.00	1,060.00	10.80	7.30	20.00
Site Preparation	3	8.00	0.00	4,954.00	10.80	7.30	20.00
Grading	4	10.00	0.00	3,420.00	10.80	7.30	20.00
Draiange/Utilities/Subgrade			0.00	0.00	10.80	7.30	
Foundations/Concrete Pour	8	86.00	44.00	0.00	10.80	7.30	20.00
Building Construction	8	86.00	44.00	0.00	10.80	7.30	20.00
Architectural Coating	1	17.00	0.00	0.00	10.80	7.30	20.00

As you can see in the excerpt above, the model for RAB construction fails to account for the full amount of demolition required for the Project. This presents an issue, as the total amount of demolition material is used by CalEEMod to determine the fugitive dust emissions associated with this phase of construction.[18] By failing to account for the demolition of all existing structures, the model underestimates the Project's fugitive dust emissions associated with demolition. Thus, the model underestimates the Project's construction-related emissions and should not be relied upon to determine the significance of air quality impacts.

[17] http://www.aqmd.gov/docs/default-source/caleemod/02_appendix-a2016-3-2.pdf?sfvrsn=6, p. 14
[18] CalEEMod User Guide, Appendix A, *available at:* http://www.caleemod.com/, p. 34.

Unsubstantiated Changes to Acres of Grading Values

Review of the Project's CalEEMod output files demonstrates that the "New Hospital Construction" and "UCSF CPHP RAB Construction" models include unsubstantiated reductions to the anticipated acres of grading values and as a result, the models may underestimate the Project's construction-related emissions.

First, the "New Hospital Construction" model includes reductions to the default acres of grading values (see excerpt below) (Appendix AIR, pp. 1114).

Table Name	Column Name	Default Value	New Value
tblGrading	AcresOfGrading	76.00	2.00
tblGrading	AcresOfGrading	228.00	3.00

As you can see in the excerpt above, the acres of grading value was reduced by roughly 97% during the grading phase of construction, from a default value of 76 acres to 2 acres, and by roughly 99% during the site preparation phase of construction, from a default value of 228 acres to 3 acres.

Second, the "UCSF CPHP RAB Construction" model includes reductions to the default acres of grading values (see excerpt below) (Appendix AIR, pp. 1174).

Table Name	Column Name	Default Value	New Value
tblGrading	AcresOfGrading	109.50	3.00
tblGrading	AcresOfGrading	99.00	4.50

As you can see in the excerpt above, the acres of grading value was reduced by roughly 97% during the grading phase of construction, from a default value of 109.5 acres to 3 acres, and by roughly 96% during the site preparation phase of construction, from a default value of 99 acres to 4.5 acres.

As previously mentioned, the CalEEMod User's Guide requires any changes to model defaults be justified.[19] According to the "User Entered Comments & Non-Default Data" table for the "New Hospital Construction" model, the justification provided for these changes is: "Project site is two acres" (Appendix AIR, pp. 1112). Furthermore, according to the "User Entered Comments & Non-Default Data" table for the "UCSF CPHP RAB Construction" model, the justification provided for these changes is: "Excavation volume provided by applicant" (Appendix AIR, pp. 1172). However, these justifications are insufficient, as neither the dimensions of the Project site, nor the excavation volume, are utilized to determine the correct acres of grading values. According to the CalEEMod User's Guide:

> "[T]he dimensions (e.g., length and width) of the grading site have no impact on the calculation, only the total area to be graded. In order to properly grade a piece of land multiple passes with equipment may be required. The acres is based on the equipment list and days in grading or site

[19] CalEEMod User Guide, *available at:* http://www.aqmd.gov/docs/default-source/caleemod/01_user-39-s-guide2016-3-2_15november2017.pdf?sfvrsn=4, p. 2, 9

> preparation phase according to the anticipated maximum number of acres a given piece of equipment can pass over in an 8-hour workday."[20]

As you can see in the excerpt above, the acres of grading value is calculated based on the equipment list and grading or site preparation phase length, not the dimensions of the Project or grading site or excavation volume. As a result, these justifications are insufficient, and we cannot verify the revised acres of grading values. This presents an issue, as the acres of grading values are used by CalEEMod to estimate the dust emissions associated with grading.[21] Thus, by including unsubstantiated reductions to the Project's default acres of grading values, the models may underestimate the Project's construction-related emissions and should not be relied upon to determine the significance of air quality impacts.

Unsubstantiated Reduction of Hauling Trips

Review of the Project's CalEEMod output files demonstrates that the number of hauling trips required for construction of the Initial Aldea Housing Densification was reduced from 313- to 312-acres in the "UCSF Aldea Housing Initial Phase Construction" model (see excerpt below) (Appendix AIR, pp. 1087).

Table Name	Column Name	Default Value	New Value
tblTripsAndVMT	HaulingTripNumber	313.00	312.00

As previously mentioned, the CalEEMod User's Guide requires any changes to model defaults be justified.[22] However, no justification is provided in the corresponding "User Entered Comments & Non-Default Data" table (Appendix AIR, pp. 1086). Furthermore, the DEIR fails to mention or substantiate this change whatsoever, and as a result, we cannot verify the revised hauling trip number. This unsubstantiated reduction presents an issue, as the number of hauling trips and associated vehicle miles traveled ("VMT") are used by CalEEMod to determine both the exhaust emissions associated with on-road vehicle use and fugitive dust emissions.[23] By including an unsubstantiated reduction to the Project's anticipated hauling trip number, the model may underestimate the Project's construction-related emissions and should not be relied upon to determine Project significance.

Incorrect Application of Tier 4 Final Mitigation

According to the DEIR, the Project would implement CPHP Mitigation Measure AIR-1a, which states:

> "All mobile diesel-powered off-road equipment larger than 25 horsepower and operating on the project site for more than two days continuously shall be equipped with engines meeting USEPA emissions standards for ***Tier 4 engines*** or equivalent" (emphasis added) (p. 2-13, Table 2-3).

As the above excerpt demonstrates, CPHP Mitigation Measure AIR-1a requires the use of *Tier 4* equipment, but does not specify whether the Project would implement Tier 4 *Interim* or Tier 4 *Final*

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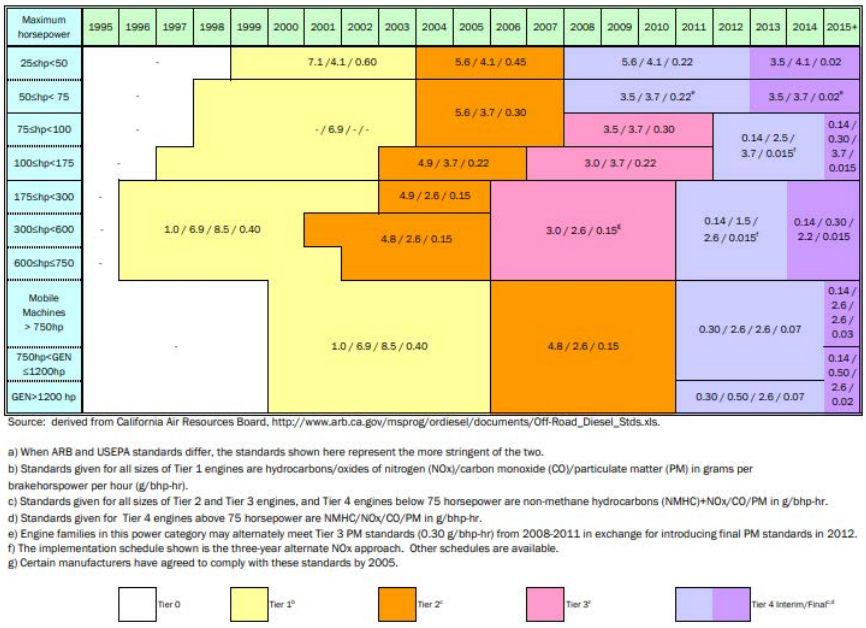
[20] "Appendix A Calculation Details for CalEEMod." *available at:* http://www.aqmd.gov/docs/default-source/caleemod/02_appendix-a2016-3-2.pdf?sfvrsn=6, p. 9.
[21] "Appendix A Calculation Details for CalEEMod." *available at:* http://www.aqmd.gov/docs/default-source/caleemod/02_appendix-a2016-3-2.pdf?sfvrsn=6, p. 9.
[22] CalEEMod User Guide, *available at:* http://www.caleemod.com/, p. 2, 9
[23] CalEEMod User Guide, Appendix A, *available at:* http://www.caleemod.com/, p. 13.

mitigation. However, review of the Project's CalEEMod output files demonstrates that the models estimated emissions assuming that the more efficient Tier 4 ***Final*** equipment would be used (Appendix AIR, pp. 1086-1087, 1113, 1147, 1173). This presents an issue, as the DEIR does not commit to the use of the more efficient Tier 4 ***Final*** equipment. The United States Environmental Protection Agency ("U.S. EPA") has slowly adopted more stringent standards to lower the emissions from off-road construction equipment since 1994. Since that time, Tier 1, Tier 2, Tier 3, Tier 4 ***Interim***, and Tier 4 ***Final*** construction equipment has been phased in over time. Tier 4 ***Final*** represents the *cleanest* burning equipment and therefore has the lowest emissions compared to other tiers, including Tier 4 ***Interim*** equipment (see excerpt below):[24]



Source: derived from California Air Resources Board, http://www.arb.ca.gov/msprog/ordiesel/documents/Off-Road_Diesel_Stds.xls.

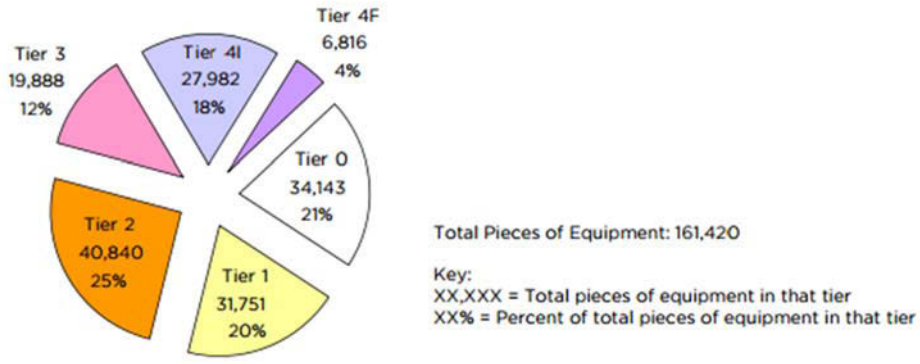
a) When ARB and USEPA standards differ, the standards shown here represent the more stringent of the two.
b) Standards given for all sizes of Tier 1 engines are hydrocarbons/oxides of nitrogen (NOx)/carbon monoxide (CO)/particulate matter (PM) in grams per brakehorsepower per hour (g/bhp-hr).
c) Standards given for all sizes of Tier 2 and Tier 3 engines, and Tier 4 engines below 75 horsepower are non-methane hydrocarbons (NMHC)+NOx/CO/PM in g/bhp-hr.
d) Standards given for Tier 4 engines above 75 horsepower are NMHC/NOx/CO/PM in g/bhp-hr.
e) Engine families in this power category may alternately meet Tier 3 PM standards (0.30 g/bhp-hr) from 2008-2011 in exchange for introducing final PM standards in 2012.
f) The implementation schedule shown is the three-year alternate NOx approach. Other schedules are available.
g) Certain manufacturers have agreed to comply with these standards by 2005.

As demonstrated in the figure above, Tier 4 ***Interim*** equipment has greater emission levels than Tier 4 ***Final*** equipment. Therefore, by modeling construction emissions assuming nearly a full Tier 4 ***Final*** equipment fleet, the DEIR failed to account for higher emissions that may occur as a result of the use of Tier 4 ***Interim*** equipment. Since CPHP Mitigation Measure AIR-1a fails to specify whether the Project will use Tier 4 ***Interim*** or Tier 4 ***Final*** equipment, it is incorrect to model emissions assuming that the *more efficient* Tier 4 ***Final*** equipment will be used. Until the DEIR demonstrates that the Project will actually use Tier 4 ***Final*** engines during all phases of construction, and not Tier 4 ***Interim*** equipment, the DEIR's modeling should not be relied upon to determine Project significance.

[24] "San Francisco Clean Construction Ordinance Implementation Guide for San Francisco Public Projects." August 2015, *available at:* https://www.sfdph.org/dph/files/EHSdocs/AirQuality/San_Francisco_Clean_Construction_Ordinance_2015.pdf, p. 6

Furthermore, the DEIR failed to evaluate the *feasibility* of obtaining Tier 4 equipment. Due to the limited amount of Tier 4, especially Tier 4 ***Final***, equipment available, the DEIR should have assessed the feasibility in obtaining equipment with Tier 4 engines (see excerpt below).[25]

Figure 4: 2014 Statewide All Fleet Sizes (Pieces of Equipment)



As demonstrated in the figure above, the Tier 4 *Final* and *Interim* equipment only account for 4% and 18%, respectively, of all off-road equipment currently available in California. Thus, emissions are modeled assuming that the Project will be able to obtain Tier 4 ***Final*** equipment even though this equipment only accounts for 4% of available off-road equipment currently available in California. As a result, the model represents the best-case scenario even though obtaining these types of equipment may not be feasible. Until the Project evaluates the feasibility of obtaining Tier 4 equipment, the model may underestimate the Project's construction-related emissions and should not be relied upon to determine Project significance.

Unsubstantiated Changes to Vehicle Emission Factors

Review of the Project's CalEEMod output files demonstrates that numerous operational vehicle emission factors were manually altered in several of the models (Appendix AIR, pp. 1218-1232, 1298-1312, 1329-1343, 1389-1402). As previously mentioned, the CalEEMod User's Guide requires any changes to model defaults be justified.[26] According to the "User Entered Comments & Non-Default Data" table, the justification provided for these changes is: "EMFAC 2017" (Appendix AIR, pp. 1327). Furthermore, the DEIR states:

> "Operational emissions for the Irving Street Arrival, RAB and initial Aldea Housing Densification projects were estimated using the CalEEMod (version 2016.3.2) adjusted with recently EPA-approved Emfac2017 emissions factors" (p. 4.2-23).

However, these justifications are insufficient, as EMFAC refers to an ***entire database***, not a specific set of vehicle emission factors.[27] Thus, the DEIR and associated appendices should have either specified which

[25] "San Francisco Clean Construction Ordinance Implementation Guide for San Francisco Public Projects." August 2015, *available at:* https://www.sfdph.org/dph/files/EHSdocs/AirQuality/San_Francisco_Clean_Construction_Ordinance_2015.pdf.
[26] CalEEMod User Guide, *available at:* http://www.caleemod.com/, p. 2, 9
[27] "EMFAC2017 Web Database." CARB, *available at:* https://arb.ca.gov/emfac/2017/.

input parameters were used to obtain the vehicle emission factors inputted in the model or disclosed the specific set of emission factors inputted into the model from the database. Without specific input parameters or a specific set of emission factors, we cannot verify the revised operational vehicle emission factors inputted into the models. This presents an issue, as the vehicle emission factors are used by CalEEMod to calculate the Project's emissions associated with operational on-road vehicles.[28] Thus, by including unsubstantiated changes to the Project's operational vehicle emission factors, the models may underestimate the Project's operational emissions and should not be relied upon to determine Project significance.

Unsubstantiated Change to Consumer Product Emission Factors

Review of the Project's CalEEMod output files demonstrates that the models include a manual reduction to the Project's anticipated consumer product reactive organic gas/volatile organic compound ("ROG/VOC") emission factor ("ROG_EF") value (see excerpt below) (Appendix AIR, pp. 1218, 1251, 1298, 1388).

Table Name	Column Name	Default Value	New Value
tblConsumerProducts	ROG_EF	2.14E-05	1.51E-05

As you can see in the excerpt above, the ROG_EF value was reduced by 29%, from 2.14E-05 to 1.51E-5 pounds of ROG/VOC per square foot per day ("lb ROG/SF/day"). As previously mentioned, the CalEEMod User's Guide requires any changes to model defaults be justified.[29] According to the "User Entered Comments & Non-Default Data" table, the justification provided for these changes is: "SF specific ROG Factor" (Appendix AIR, pp. 1218, 1250, 1297, 1388). However, this justification fails to provide a source for the revised emission factor or disclose what "SF specific" even means. In addition, the DEIR fails to mention this change whatsoever. As a result, we cannot verify the updated emission factor. This presents an issue, as consumer product emission factors are used by CalEEMod to calculate the Project's ROG/VOC emissions.[30] Thus, by including an unsubstantiated change to the Project's anticipated consumer product emission factor, the models underestimate the Project's area-source operational emissions and should not be relied upon to determine Project significance.

Unsubstantiated Reduction to Road Silt Loading Value

Review of the Project's CalEEMod output files demonstrates that the road silt loading value was manually reduced from the default value of 0.1- to 0.048-grams per square meter ("g/m^2") in the "CPHP Operational Existing," "CPHP Operational CPHP Campus Wide 2050," "UCSF Initial Phase Projects Operational," and "CPHP Operational 2050 No Project" models (see excerpt below) (Appendix AIR, pp. 1218, 1298, 1329, 1388).

Table Name	Column Name	Default Value	New Value
tblRoadDust	RoadSiltLoading	0.1	0.048

[28] CalEEMod User Guide, *available at:* http://www.caleemod.com/, p. 2, 9
[29] CalEEMod User Guide, *available at:* http://www.caleemod.com/, p. 2, 9
[30] CalEEMod User Guide, *available at:* http://www.caleemod.com/, p. 2, 9

As you can see in the excerpt above, the Road Silt Loading value was reduced from the default value of 0.1- to 0.048-g/m^2. As previously mentioned, the CalEEMod User's Guide requires any changes to model defaults be justified.[31] According to the "User Entered Comments & Non-Default Data" table, the justification provided for this change is "CARB Method 7.9" (pp. 1218, 1297, 1328, 1388). However, review of the DEIR demonstrates that neither the road silt loading value nor CARB Method 7.9 is mentioned whatsoever.

Furthermore, review of CARB's *Miscellaneous Process Methodology 7.9* ("CARB Method 7.9") reveals that this change is unsubstantiated and incorrect for two (2) reasons. First, CARB Method 7.9 demonstrates that the Road Silt Loading values provided are outdated and have not been updated since 2008. As CalEEMod was most recently updated in 2016, values from 2008 would already be considered and should not be used to "update" the model. Second, review of CARB Method 7.9 reveals that a Road Silt Loading value of 0.048 applies to *San Diego*, not San Francisco (see excerpt below).[32]

Air Basin	County	Air District	2012 VMT (million VMT per year)	2008 HPMS Travel Fractions (2)			
				Freeway	Major	Collector	Local, Local Urban (3)
SD	San Diego	SD	30,297	0.553	0.319	0.080	0.048

As you can see in the excerpt above, the Road Silt Loading value of 0.048, as manually inputted into the models for the proposed Project, applies to *San Diego*, not San Francisco. As a result, we cannot verify the revised road silt loading value.

This presents an issue, as the road silt loading value is used by CalEEMod to calculate the fugitive dust emissions associated with operational vehicle trips on paved roads.[33] Thus, by including an unsubstantiated reduction to the Project's anticipated road silt loading value, the models may underestimate the Project's operational emissions and should not be relied upon to determine Project significance.

Unsubstantiated Changes to Trip Rates

Review of the Project's CalEEMod output files demonstrates that the operational vehicle trip rates were manually reduced in the "UCSF Initial Phase Project's Operational" model (see excerpt below) (Appendix AIR, pp. 1343).

Table Name	Column Name	Default Value	New Value
tblVehicleTrips	ST_TR	10.18	9.00
tblVehicleTrips	SU_TR	8.91	8.55
tblVehicleTrips	WD_TR	13.22	12.00

[31] CalEEMod User Guide, *available at:* http://www.caleemod.com/, p. 2, 9
[32] https://ww3.arb.ca.gov/ei/areasrc/fullpdf/full7-9_2016.pdf, Table 6, pp. 18.
[33] "Appendix A Calculation Details for CalEEMod." *available at:* http://www.caleemod.com/, p. 29.

As a result, the model calculated Weekday, Saturday, and Sunday daily trip numbers of 2,734.28 (see excerpt below) (Appendix AIR, pp. 1349).

Land Use	Weekday	Saturday	Sunday
Apartments High Rise	147.68	147.68	147.68
Research & Development	2,586.60	2,586.60	2586.60
Total	2,734.28	2,734.28	2,734.28

As previously mentioned, the CalEEMod User's Guide requires any changes to model defaults be justified.[34] According to the "User Entered Comments & Non-Default Data" table, the justification provided for these changes is: "Rate changes to match Adavant VMT" (Appendix AIR, pp. 1327). However, while the DEIR provides estimates of daily vehicle miles traveled ("VMT") per capita, the DEIR fails to indicate the *number of daily trips* that the Initial Phase of the proposed Project is expected to generate (p. 4.15-37, 4.15-42, 4.15-45). Furthermore, the DEIR indicates that the CPHP Future Phase would generate 52,200 daily trips, which is 1,809% higher than the number of trips included in the CPHP Initial Phase model (p. 4.15-29). As a result, we cannot verify the revised trip rates utilized in the model. By including unsubstantiated reductions to the Project's operational vehicle trip rates, the model may underestimate the Project's mobile-source operational emissions and should not be relied upon to determine Project significance.

Unsubstantiated Changes to Energy Use Values

Review of the Project's CalEEMod output files demonstrates that two (2) of the Project's operational models include unsubstantiated reductions to the Project's anticipated energy use values. As a result, the models may underestimate the Project's operational emissions.

First, the operational energy use values were manually reduced to 0 kilowatt hours per land use size per year ("KWhr/size/yr") in the "UCSF Initial Phase Project's Operational" model (see excerpt below) (Appendix AIR, pp. 1328).

Table Name	Column Name	Default Value	New Value
tblEnergyUse	LightingElect	741.44	0.00
tblEnergyUse	LightingElect	2.99	0.00
tblEnergyUse	NT24E	3,054.10	0.00
tblEnergyUse	NT24E	3.36	0.00
tblEnergyUse	T24E	426.45	0.00

As you can see in the excerpt above, the lighting electricity ("LightingElect"), Nontitle-24 electricity energy intensity ("NT24E"), and Title-24 electricity energy intensity ("T24E") values were each reduced to 0 KWhr/size/yr. As previously mentioned, the CalEEMod User's Guide requires any changes to model defaults be justified.[35] According to the "User Entered Comments & Non-Default Data" table for the

[34] CalEEMod User Guide, *available at:* http://www.caleemod.com/, p. 2, 9
[35] CalEEMod User Guide, *available at:* http://www.caleemod.com/, p. 2, 9

"UCSF Initial Phase Project's Operational" model, the justification provided for these changes is: "UCSF Net zweo electricity by 2030" (Appendix AIR, pp. 1328). Furthermore, regarding the Project's energy use, the DEIR states:

> "UCSF has committed to net zero electricity by 2025 and no GHG emissions are predicted from electrical usage under full buildout of the CPHP" (p. 4.7-36, Table 4.7-3).

However, simply because UCSF has a zero net electricity *goal* for *2025* or *2030*, does not guarantee that it will be achieved locally on the Project site. Furthermore, without a substantial justification, the proposed Project cannot claim that the *campus-wide* zero net electricity *goal* will result in a project-level reduction in electricity use. Moreover, we are unable to verify if this goal is for 2025 or 2030, as the DEIR and "User Entered Comments & Non-Default Data" table provide contradictory years. Finally, the DEIR acknowledges that this goal is for 2025, which is 5 years away, and the "User Entered Comments & Non-Default Data" table acknowledges that this goal is for 2030, which is 10 years away. As a result, we cannot verify that the Project would result in zero electricity use throughout the Project's *entire* operation.

Second, the operational energy use values were manually reduced in the "RAB Energy Emissions Only" model (see excerpt below) (Appendix AIR, pp. 1371-1372).

Table Name	Column Name	Default Value	New Value
tblEnergyUse	T24E	1.21	0.97
tblEnergyUse	T24NG	17.85	14.28

As you can see in the excerpt above, the T24E and Title-24 natural gas energy intensity ("T24NG") values were each reduced by 20%. As previously mentioned, the CalEEMod User's Guide requires any changes to model defaults be justified.[36] According to the "User Entered Comments & Non-Default Data" table for the "RAB Energy Emissions Only" model, the justification provided for these changes is: "UCSF to meet 20% reduction over Title 24. ADjuste T24 demand 20%" (Appendix AIR, pp. 1371). Furthermore, while CPHP Mitigation Measure AIR-2a requires the Project to "[i]ncrease building energy efficiency below Title 24," CPHP Mitigation Measure AIR-2a fails to specify *what specific percentage below Title 24 standards would be required* (p. 2-15, Table 2-3). The DEIR and associated documents also fail to disclose any of the assumptions or calculations used to conclude this 20% reduction. Without disclosing this information, including an analysis of the feasibility of achieving this reduction, we are unable to confirm that it will actually be achieved on the Project site. As a result, we cannot verify the revised T24E and T24NG energy use values.

These unsubstantiated changes present an issue, as the energy use values are used by CalEEMod to calculate the Project's emissions associated with building electricity and natural gas usage.[37] Thus, by including unsubstantiated reductions to the Project's anticipated energy use values, the models

[36] CalEEMod User Guide, *available at:* http://www.caleemod.com/, p. 2, 9
[37] CalEEMod User Guide, *available at:* http://www.caleemod.com/, p. 43

underestimate the Project's operational emissions and should not be relied upon to determine Project significance.

Diesel Particulate Matter Health Risk Emissions Inadequately Evaluated

The DEIR includes health risk assessments ("HRAs") for construction of the Irving Street Arrival, RAB, New Hospital, and Initial Aldea Housing Densification components of the Initial Phase of the Project and concludes that the resulting cancer risks would be 1.17, 2.91, 4.72, and 0.67 in one million, respectively, after the implementation of CPHP Mitigation Measure AIR-1a (see excerpts below) (p. 4.2-53-56, Table 4.2-15, Table 4.2-16, Table 4.2-17, Table 4.2-18).

Irving Street Arrival Construction:

TABLE 4.2-15
MITIGATED PROJECT HEALTH IMPACTS ESTIMATED, IRVING STREET ARRIVAL CONSTRUCTION

Receptor Type[a]	Cancer Risk	Chronic Hazard Index[b,c]	$PM_{2.5}$ Concentration ($\mu g/m^3$)[c]
Resident – Offsite Receptor			
Project Construction[d]	1.17	<0.01	<0.01
Significance Threshold	10	1.0	0.3
Significant (Yes or No)?	No	No	No

RAB Construction:

TABLE 4.2-16
MITIGATED PROJECT HEALTH IMPACTS ESTIMATED, RAB CONSTRUCTION

Receptor Type[a]	Cancer Risk	Chronic Hazard Index[b,c]	$PM_{2.5}$ Concentration ($\mu g/m^3$)[c]
Resident – Offsite Receptor			
Project Construction[d]	2.91	<0.01	0.01
Significance Threshold	10	1.0	0.3
Significant (Yes or No)?	No	No	No

New Hospital Construction:

TABLE 4.2-17
MITIGATED PROJECT HEALTH IMPACTS ESTIMATED, NEW HOSPITAL CONSTRUCTION

Receptor Type[a]	Cancer Risk	Chronic Hazard Index[b,c]	$PM_{2.5}$ Concentration ($\mu g/m^3$)[c]
Resident – Offsite Receptor			
Project Construction[d]	4.72	<0.01	0.01
Significance Threshold	10	1.0	0.3
Significant (Yes or No)?	No	No	No

Initial Aldea Housing Densification Construction:

TABLE 4.2-18
MITIGATED PROJECT HEALTH IMPACTS ESTIMATED, INITIAL ALDEA HOUSING DENSIFICATION CONSTRUCTION

Receptor Type[a]	Cancer Risk	Chronic Hazard Index[b,c]	$PM_{2.5}$ Concentration ($\mu g/m^3$)[c]
Resident – Offsite Receptor			
Project Construction[d]	0.67	<0.01	<0.01
Significance Threshold	10	1.0	0.3
Significant (Yes or No)?	N	N	No

As you can see in the excerpts above, the DEIR concludes that the construction of Irving Street Arrival, RAB, New Hospital, Initial Aldea Housing Densification components of the Project would result in mitigated cancer risks of 1.17, 2.91, 4.72, and 0.67 in one million, respectively. As a result, the DEIR concludes that the Project's mitigated construction-related cancer risks would not exceed the BAAQMD threshold of 10 in one million (p. 4.2-53-56, Table 4.2-15, Table 4.2-16, Table 4.2-17, Table 4.2-18). Furthermore, regarding the Project's operational health risk impacts, the DEIR states:

> "[P]otential incremental cancer risks associated with operation of the RAB were estimated. As discussed below, no new TAC sources such as emergency generators are included in the Irving Street Arrival or for the Aldea Housing Densification projects and therefore, these projects are not analyzed below for potential cancer risk from operational TAC sources" (p. 4.2-61).

Thus, as a result of an operational HRA prepared to evaluate the health risk impacts associated with the *emergency generators* included in the RAB component of the Project *only*, the DEIR concludes that the Project would result in an operational cancer risk of 0.26 in one million (see excerpt below) (p. 4.2-62, Table 4.2-19).

TABLE 4.2-19
ESTIMATED OPERATIONAL HEALTH IMPACTS OF THE RAB

Receptor Type	Cancer Risk	Chronic Hazard Index	Acute Hazard Index	$PM_{2.5}$ Concentration ($\mu g/m3$)[d]
Resident – Offsite Receptor				
Project Operations	0.26	<0.01	<0.01	0.01
Significance Threshold	10	1.0	1.0	0.3
Significant (Yes or No)?	N	No	No	No
Resident – Onsite Residence				
Project Operations	0.04	<0.01	<0.01	<0.01
Significance Threshold	10	1.0	1.0	0.3
Significant (Yes or No)?	N	No	No	No

As a result, the DEIR concludes that the Project's operational cancer risk would not exceed the BAAQMD threshold of 10 in one million (p. 4.2-62, Table 4.2-19). However, the DEIR's evaluation of the Project's health risk impacts, as well as the subsequent less-than-significant impact conclusion is incorrect for four (4) reasons.

First, as previously discussed, the DEIR's mitigated construction-related cancer risks rely upon the implementation of CPHP Mitigation Measure AIR-1a, which is included in the Project's CalEEMod models

as Tier 4 *Final* construction equipment. However, this is incorrect, as CPHP Mitigation Measure AIR-1a fails to indicate whether Tier 4 *Interim* or Tier 4 *Final* construction equipment would be required and as such, impacts may be reduced by an overestimated amount. Furthermore, as discussed above, the DEIR fails to evaluate the feasibility of obtaining a construction fleet of entirely Tier 4 *Final* equipment. As a result, the application of Tier 4 *Final* mitigation in the DEIR's CalEEMod models is unsupported, and the DEIR's reliance upon this mitigation measure is incorrect. As such, without specifying which type of Tier 4 mitigation would be implemented and evaluating the feasibility of obtaining this equipment, the DEIR should not rely on CPHP Mitigation Measure AIR-1a to reduce the health risk impacts associated with Project construction to a less than significant level.

Second, while DEIR includes an HRA assessing the health risk impacts associated with the *emergency generators* associated with the operation of the RAB component of the Initial Phase of the Project, the DEIR fails to evaluate the health risk impacts resulting from the Project's *entire* operation. This is incorrect, as the DEIR indicates that the CPHP would result in 52,200 daily vehicle trips throughout operation, which will result in additional exhaust (p. 4.15-29, Table 4.15-7). Furthermore, while the DEIR indicates that operational emissions of toxic air contaminants ("TACs") would occur as a result of mobile sources, in addition to stationary sources, the DEIR fails to provide any evaluation of the potential health risk impacts associated with these emissions whatsoever (p. 4.2-58). As such, this *partial* operational HRA cannot be used to determine impacts from the *entire* Project's operations, and the DEIR's less than significant health risk impact should not be relied upon. As such, we recommend that an updated assessment of health risk impacts posed to nearby sensitive receptors from Project operation be included in an updated EIR for the Project.

Third, review of the DEIR demonstrates that, while the Project did conduct several *partial* construction HRAs, as well as one *partial* operational HRA, that evaluate the health risk impacts to nearby, existing receptors, the HRA fails to evaluate the *cumulative* lifetime cancer risk to nearby, existing receptors as a result of Project construction and operation *together*. According to OEHHA guidance, as referenced by the DEIR, "the excess cancer risk is calculated separately for each age grouping and then summed to yield cancer risk at the receptor location".[38] However, the HRAs conducted in the DEIR fail to sum each age bin to evaluate the total cancer risk over the course of the Project's construction and operation, as is required by the guidance. This is incorrect and thus, an updated analysis should quantify the Project's construction and operational health risks and then sum them to compare to the BAAQMD threshold of 10 in one million, as referenced by the DEIR (p. 4.2-16).

Greenhouse Gas

Failure to Adequately Evaluate Greenhouse Gas Impacts

The DEIR concludes that the Project would result in an annual increase in greenhouse gas ("GHG") emissions of 61,815 metric tons of carbon dioxide equivalents per year ("MT CO_2e/year"), as well as a service population efficiency of 10.9 metric tons of carbon dioxide equivalents per service population

[38] "Guidance Manual for preparation of Health Risk Assessments." OEHHA, February 2015, *available at:* https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf p. 8-4

per year ("MT CO_2e/SP/year"), which indicates a significant GHG impact (p. 4.7-36). As a result, the DEIR includes CPHP Mitigation Measure GHG-1c, which states:

> "[Mitigation Measure GHG-1c] is identified to reduce GHG emissions under the CPHP to a net zero increase and a less than significant impact with mitigation. To achieve the net zero increase, CPHP Mitigation Measure GHG-1c sets forth a numerical performance standard based on the existing GHG emissions inventory for the Parnassus Heights campus site and requires any GHG emissions in excess of the existing inventory of 125,426 MT CO2e per year to be offset" (p. 4.7-37).

Furthermore, the DEIR relies upon the Project's consistency with CARB's 2017 *Scoping Plan* and the Plan Bay Area 2040 in order to conclude that the Project would result in a less than significant GHG impact (p. 4.7-44 – 4.7-45). Specifically, the DEIR states:

> "By implementing the updated GHGRS and CPHP Mitigation Measures GHG-1a through 1c, thereby achieving consistency with UCSF's CNI, the CPHP would be consistent with CARB's 2017 Scoping Plan Update and with Executive Order S-3-05, which established a goal of reducing California's GHG emissions to 80 percent below the 1990 level by the year 2050. The CPHP would also be consistent with Plan Bay Area 2040, which includes the Regional Transportation Plan, and was adopted as the Bay Area's Sustainable Communities Strategy pursuant to California Senate Bill 375" (p. 4.7-44 – 4.7-45).

However, the DEIR's quantitative and qualitative GHG analyses, as well as the subsequent less than significant impact conclusion, are incorrect for the following three (3) reasons:

1) The DEIR's quantitative analysis of the Project's GHG emissions relies upon an incorrect and unsubstantiated air model;
2) The DEIR incorrect relies upon the Project's consistency with CARB's 2017 *Scoping Plan* to determine Project significance; and
3) The DEIR incorrect relies upon the Project's consistency with the Plan Bay Area 2040 to determine Project significance.

1) Incorrect and Unsubstantiated Analysis of Emissions

As discussed above, the DEIR concludes that the proposed Project would generate net annual GHG emissions of 61,815 MT CO_2e/year, as well as a service population efficiency of 10.9 MT CO_2e/SP/year. However, the DEIR's quantitative GHG analysis is underestimated and unsubstantiated. As previously discussed, when we reviewed the Project's CalEEMod output files, provided as Appendix AIR to the DEIR, we found that several of the values inputted into the model are not consistent with information disclosed in the DEIR and associated documents. As a result, the model underestimates the Project's GHG emissions, and the DEIR's quantitative GHG analysis should not be relied upon to determine Project significance. An updated EIR should be prepared that adequately assesses the potential GHG impacts that construction and operation of the proposed Project may have on the surrounding environment.

2) Incorrect Reliance upon CARB's 2017 Scoping Plan

As previously discussed, the DEIR relies upon the Project's consistency with CARB's *Scoping Plan* to determine the Project's GHG significance. However, this is incorrect for two (2) reasons.

First, many of the measures include future reduction targets at the city, state, and local levels. However, just because the *state/region/agency* have these *goals* does not mean that they will be achieved locally on the Project site. As such, the DEIR cannot claim that the Project complies with these measures, when they may not even be achieved.

Two, review of CARB's *Scoping Plan* demonstrates that the proposed Project is inconsistent with several measures, including but not limited to the analysis below:

CARB 2017 Scoping Plan[39]	
Measures – Construction	
Divert and recycle construction and demolition waste, and use locally-sourced building materials with a high recycled material content to the greatest extent feasible	Here, the DEIR fails to mention or discuss the feasibility of diverting and recycling construction and demolition waste. Furthermore, the DEIR also fails to mention or discuss the feasibility of using locally-sourced building materials with a high recycled material content. As such, the proposed Project is not consistent with this measure and the DEIR lacks substantial evidence to support its consistency determination.
Utilize existing grid power for electric energy rather than operating temporary gasoline/diesel powered generators	Here, the DEIR fails to mention the use of existing grid power for electric energy rather than operational gasoline or diesel powered generators. Furthermore, the DEIR discusses how the Project site contains two gas turbine generators and 14 diesel generators (Table 4.2-4, p. 4.2-13). As such, the proposed Project is not consistent with this measure and the DEIR lacks substantial evidence to support its consistency determination.
Measures – Operation	
Allow for new construction to install fewer on-site parking spaces than required by local municipal building code, if appropriate	Here, the DEIR fails to mention or allow the Project to install fewer on-site parking spaces than required by local municipal building code. As such, the proposed Project is not consistent with this measure and the DEIR lacks substantial evidence to support its consistency determination.

[39] California Air Resources Board ("CARB") (Jan. 2017) 2017 Scoping Plan, Appendix B-Local Action, *available at:* https://ww3.arb.ca.gov/cc/scopingplan/2030sp_appb_localaction_final.pdf, p. 8-10.

Require on-site renewable energy generation	Here, the DEIR states that "CPHP operations would require long-term consumption of energy in the form of electricity, natural gas, gasoline, and diesel fuel" and that "the CPHP would not require additional power generation plants… to be constructed" (p. 4.5-20, 4.5-25). Thus, the DEIR fails to require or discuss the feasibility of on-site renewable energy generation. As such, the proposed Project is not consistent with this measure and the DEIR lacks substantial evidence to support its consistency determination.
Require solar-ready roofs	Here, the DEIR fails to mention or require solar-ready roofs. As such, the proposed Project is not consistent with this measure and the DEIR lacks substantial evidence to support its consistency determination.
Require low-water landscaping in new developments (see CALGreen Divisions 4.3 and 5.3 and the Model Water Efficient Landscape Ordinance [MWELO], which is referenced in CALGreen). Require water efficient landscape maintenance to conserve water and reduce landscape waste.	Here, while the DEIR states that UCSF "shall *strive* to reduce potable water used for irrigation by converting to recycled water, implementing efficient irrigation systems, drought tolerant planting selections, and/or by removing turf," the Project fails to require or commit to the implementation of water efficient landscape. As such, the proposed Project is not consistent with this measure and the DEIR lacks substantial evidence to support its consistency determination.
Achieve Zero Net Energy performance building standards prior to dates required by the Energy Code	Here, the DEIR fails to mention or discuss the feasibility of achieving Zero Net Energy performance building standards prior to dates required by the Energy Code. As such, the proposed Project is not consistent with this measure and the DEIR lacks substantial evidence to support its consistency determination.
Develop a rideshare program targeting commuters to major employment centers	Here, the DEIR fails to mention developing a rideshare program to target commuters to major employment centers. As such, the proposed Project is not consistent with this measure and the DEIR lacks substantial evidence to support its consistency determination.
Require gas outlets in residential backyards for use with outdoor cooking appliances such as gas barbeques if natural gas service is available	Here, the DEIR fails to mention or discuss the feasibility of requiring gas outlets in residential backyards for use with outdoor cooking appliances. As such, the proposed Project is not consistent

	with this measure and the DEIR lacks substantial evidence to support its consistency determination.
Require the installation of electrical outlets on the exterior walls of both the front and back of residences to promote the use of electric landscape maintenance equipment	Here, the DEIR fails to mention or discuss the feasibility of requiring the design of electric outlets on the exterior walls of both the front and back of residences to promote electric landscape maintenance equipment. As such, the proposed Project is not consistent with this measure and the DEIR lacks substantial evidence to support its consistency determination.
Require the design of the electric outlets and/or wiring in new residential unit garages to promote electric vehicle usage	Here, the DEIR fails to mention or discuss the feasibility of requiring the design of electric outlets and/or wiring in residential unit garages to promote electric vehicle usage. As such, the proposed Project is not consistent with this measure and the DEIR lacks substantial evidence to support its consistency determination.
Provide electric outlets to promote the use of electric landscape maintenance equipment to the extent feasible on parks and public/quasi-public lands	Here, the DEIR fails to mention or discuss the feasibility of providing electric outlets to promote the use of electric landscape maintenance equipment. As such, the proposed Project is not consistent with this measure and the DEIR lacks substantial evidence to support its consistency determination.
Require each residential unit to be "solar ready," including installing the appropriate hardware and proper structural engineering	Here, the DEIR fails to mention or discuss the feasibility of requiring each residential unit to be "solar ready." The DEIR also fails to mention or discuss the feasibility of requiring the appropriate hardware and proper structural engineering to be "solar ready." As such, the proposed Project is not consistent with this measure and the DEIR lacks substantial evidence to support its consistency determination.
Require the installation of energy conserving appliances such as on-demand tank-less water heaters and whole-house fans	Here, the DEIR discusses Energy Efficiency Reduction Measures, specifically that "UCSF *could* establish energy efficiency criteria for appliances installed on the Parnassus Heights campus site" (p. 4.7-37). While the DEIR states that the Project will comply with this measure because "CPHP [is] considered to have net zero electricity by 2025" (p. 4.7-37), this is incorrect. Net zero electricity by 2025 is in reference to the UC system-wide Carbon Neutrality Initiative goal of carbon neutrality across all UC campuses by 2025. Because this is a UC system-wide *goal* for net zero carbon emissions,

	we are unable to verify that this will result in energy efficient appliances locally at the Project site. As such, the proposed Project is not consistent with this measure and the DEIR lacks substantial evidence to support its consistency determination.
Require each residential and commercial building equip buildings with energy efficient AC units and heating systems with programmable thermostats/timers	Here, while the DEIR discusses "improvements that involve building renovations are likely to improve building efficiency with potential reduction of operational emissions of the CUP for heating and cooling," DEIR fails to mention or discuss the feasibility of requiring Project to include energy efficient AC units and heating systems (p. 4.2-43). The DEIR also fails to mention or discuss the feasibility of requiring these AC units and heating systems to include programmable thermostats/timers. As such, the proposed Project is not consistent with this measure and the DEIR lacks substantial evidence to support its consistency determination.
Require large-scale residential developments and commercial buildings to report energy use, and set specific targets for per-capita energy use	Here, the DEIR fails to mention or require the Project to report energy use or set specific targets for per-capita energy use. As such, the proposed Project is not consistent with this measure and the DEIR lacks substantial evidence to support its consistency determination.
Require the use of energy-efficient lighting for all street, parking, and area lighting	Here, the DEIR fails to provide any explanation of how this measure would be implemented, monitored, and enforced on the Project site. As such, we cannot verify that the proposed Project is consistent with this measure, and the DEIR lacks substantial evidence to support its consistency determination.
Require the landscaping design for parking lots to utilize tree cover and compost/mulch	Here, the DEIR fails to mention or discuss the feasibility of requiring the landscape design for the Project's proposed parking to utilize tree cover and compost/mulch. As such, the proposed Project is not consistent with this measure and the DEIR lacks substantial evidence to support its consistency determination.
Incorporate water retention in the design of parking lots and landscaping, including using compost/mulch	Here, the DEIR fails to mention or discussion the incorporation of water retention in the design of parking lots and landscaping, specifically including using compost or mulch. As such, the proposed Project is not consistent with this measure and the

	DEIR lacks substantial evidence to support its consistency determination.

As the table above indicates, the DEIR fails to provide sufficient information and analysis to determine Project consistency with numerous measures under CARB's *Scoping Plan*. Thus, we cannot verify that the proposed Project will result in less than significant GHG impacts, as claimed in the DEIR. As a result, we recommend that an updated EIR include further information and analysis in order to conclude that the proposed Project would be consistent with CARB's *Scoping Plan*.

3) Failure to Demonstrate Consistency with Plan Bay Area 2040

As discussed above, the DEIR relies upon the Project's consistency with the Plan Bay Area 2040 (p. 4.7-45). However, this is incorrect for two (2) reasons.

First, according to the Plan Bay Area 2040:

> "It is important to emphasize that the region's cities and counties retain local land use authority and that local jurisdictions will continue to determine where future development occurs. Plan Bay Area 2040 is supported through implementation efforts such as neighborhood-level planning grants for PDAs and local technical assistance. *The plan does not mandate any changes to* local zoning rules, general plans *or processes for reviewing projects; nor is the plan an enforceable direct or indirect cap on development locations or targets in the region*. As is the case across California, the Bay Area's cities, towns and counties maintain control of all decisions to adopt plans and to permit or deny development projects" (emphasis added).[40]

As you can see in the excerpt above, the Plan Bay Area 2040 does not have the jurisdiction to *require* any changes. The Plan instead states that it *cannot* be used for reviewing projects or as an enforceable cap on development targets. As such, the DEIR's claim that the Project is consistent with the Plan Bay Area 2040 and can be used to determine less than significant impacts is incorrect and unsubstantiated.

Second, the Plan Bay Area 2040 does not qualify as an adequate GHG reduction plans or Climate Action Plan ("CAP"). CEQA Guidelines §§ 15064.4(b)(3) and 15183(b) allows a lead agency to consider a project's consistency with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions. When read in conjunction, CEQA Guidelines §§ 15064.4(b)(3) and 15183.5(b)(1) make clear qualified GHG reduction plans or CAPs should include the following features:

(1) **Inventory**: Quantify GHG emissions, both existing and projected over a specified time period, resulting from activities (e.g., projects) within a defined geographic area (e.g., lead agency jurisdiction);

[40] "Plan Bay Area 2040." Metropolitan Transportation Commission (MTC) and Association of Bay Area Governments (ABAG), July 2017, *available at:* http://2040.planbayarea.org/sites/default/files/2020-02/Final_Plan_Bay_Area_2040.pdf, p. 44.

(2) **Establish GHG Reduction Goal**: Establish a level, based on substantial evidence, below which the contribution to GHG emissions from activities covered by the plan would not be cumulatively considerable;
(3) **Analyze Project Types**: Identify and analyze the GHG emissions resulting from specific actions or categories of actions anticipated within the geographic area;
(4) **Craft Performance Based Mitigation Measures**: Specify measures or a group of measures, including performance standards, that substantial evidence demonstrates, if implemented on a project-by-project basis, would collectively achieve the specified emissions level;
(5) **Monitoring**: Establish a mechanism to monitor the CAP progress toward achieving said level and to require amendment if the plan is not achieving specified levels;

Collectively, the above-listed features tie qualitative measures to quantitative results, which in turn become binding via proper monitoring and enforcement by the jurisdiction—all resulting in real GHG reductions for the jurisdiction as a whole, and substantial evidence demonstrating that a project's incremental contribution is not cumulatively considerable. Here, however, the DEIR fails to demonstrate that the Plan Bay Area 2040 includes the above-listed requirements to be considered a qualified GHG Reduction Plan for the City. As such, the DEIR leaves an analytical gap showing that compliance with said plan can be used for a project-level significance determination. Thus, the DEIR's GHG analysis regarding the Plan Bay Area 2040 should not be relied upon.

Third, the Plan Bay Area 2040's EIR discloses potential environmental impacts of the Plan, and provides mitigation measures in a Mitigation, Monitoring, and Reporting Program ("MMRP") for the Project. However, review of the Plan Bay Area 2040 EIR reveals that the proposed Project fails to address and is inconsistent with numerous mitigation measures, including but not limited to those listed below:

Plan Bay Area 2040[41]
EIR Mitigation Measures
Transportation
Mitigation Measure 2.1-3-3(b) Transportation demand management (TDM) strategies shall be incorporated into individual land use and transportation projects and plans, as part of the planning process. Local agencies shall incorporate strategies identified in the Federal Highway Administration's publication: Integrating Demand Management into the Transportation Planning Process: A Desk Reference (August 2012) into the planning process (FHWA 2012). For example, the following strategies may be included to encourage use of transit and non-motorized modes of transportation and reduce vehicle miles traveled on the region's roadways:

[41] "Plan Bay Area 2040 Draft Environmental Impact Report." MTC and ABAG, April 2017, *available at:* http://2040.planbayarea.org/sites/default/files/2017-07/PBA%202040%20DEIR_0_1.pdf, p. ES-11, Table ES-2.

- incorporate supporting infrastructure for non-motorized modes, such as, bike lanes, secure bike parking, sidewalks, and crosswalks;
- provide incentives to use alternative modes and reduce driving, such as, universal transit passes, road and parking pricing;
- implement parking management programs, such as parking cash-out;
- develop TDM-specific performance measures to evaluate project-specific and system-wide performance;
- incorporate TDM performance measures in the decision-making process for identifying transportation investments;
- implement data collection programs for TDM to determine the effectiveness of certain strategies and to measure success over time; and
- set aside funding for TDM initiatives.

The increase in per capita VMT on facilities experiencing LOS F represents a significant impact compared to existing conditions. To assess whether implementation of these specific mitigation strategies would result in measurable traffic congestion reductions, implementing actions may need to be further refined within the overall parameters of the proposed Plan and matched to local conditions in any subsequent project-level environmental analysis.

Mitigation Measure 2.1-7

Implementing agencies and/or project sponsors shall implement the following measure, where feasible and necessary based on project- and site-specific considerations. Implementing agencies shall require implementation of best practice strategies regarding construction activities on the transportation system and apply recommended applicable mitigation measures as defined by state and federal agencies. Examples of mitigation measures include, but are not limited to, the following:

- prepare a transportation construction plan for all phases of construction;
- identify arrival/departure times for trucks and construction workers to avoid peak periods of adjacent street traffic and minimize traffic affects;

encourage construction workers to use transit, carpool, and other sustainable transportation modes when commuting to and from the site.

Air Quality

Mitigation Measure 2.2-2)

When screening levels are exceeded (see Table 2.2-8 or those most currently updated by BAAQMD), implementing agencies and/or project sponsors shall implement measures, where applicable, feasible, and necessary based on project- and site-specific considerations, that include, but are not limited to the following:

Construction Best Practices for Exhaust:

- The applicant/general contractor for the project shall submit a list of all off-road equipment greater than 25 horsepower (hp) that would be operated for more than 20 hours over the entire duration of project construction, including equipment from subcontractors, to BAAQMD for

review and certification. The list shall include all information necessary to ensure the equipment meets the following requirement:

1. Be zero emissions OR
2. have engines that meet or exceed either EPA or ARB Tier 2 off-road emission standards; and
3. have engines that are retrofitted with an ARB Level 3 Verified Diesel Emissions Control Strategy (VDECS), if one is available for the equipment being used. Equipment with engines that meet Tier 4 Interim or Tier 4 Final emission standards automatically meet this requirement; therefore, a VDECS would not be required

- All construction equipment shall be maintained and properly tuned in accordance with the manufacturers' specifications.
- Portable diesel generators shall be prohibited. Grid power electricity should be used to provide power at construction sites; or propane and natural gas generators may be used when grid power electricity is not feasible.

Construction Best Practices for Dust:

- All excavation, grading, and/or demolition activities shall be suspended when average wind speeds exceed 20 mph.
- Wind breaks (e.g., trees, fences) shall be installed on the windward side(s) of actively disturbed areas of construction. Wind breaks should have at maximum 50 percent air porosity.
- Vegetative ground cover (e.g., fast-germinating native grass seed) shall be planted in disturbed areas as soon as possible and watered appropriately until vegetation is established.
- The simultaneous occurrence of excavation, grading, and ground-disturbing construction activities on the same area at any one time shall be limited. Activities shall be phased to reduce the amount of disturbed surfaces at any one time.
- All trucks and equipment, including their tires, shall be washed off before leaving the site.
- Site accesses to a distance of 100 feet from the paved road shall be treated with a 6- to 12-inch compacted layer of wood chips, mulch, or gravel.
- Sandbags or other erosion control measures shall be installed to prevent silt runoff to public roadways from sites with a slope greater than one percent.

These BMPs are consistent with recommendations in BAAQMD's CEQA guidelines and Planning Healthy Places (BAAQMD 2010b, BAAQMD 2016). Applicable mitigation measures shall be required at the time grading permits are issued.
Here, the

As such, the DEIR is not consistent with this measure and the DEIR lacks substantial evidence to support its consistency evaluation.

Mitigation Measure 2.2-5(a)

When locating sensitive receptors in TAC risk areas, implementing agencies and/or project sponsors shall implement measures, where feasible and necessary based on project- and site-specific considerations that include, but are not limited to the following:

- Install, operate and maintain in good working order a central heating, ventilation and air conditioning (HVAC) system or other air intake system in the building, or in each individual unit, that meets or exceeds a minimum efficiency reporting value (MERV) of 13 (MERV-16 for projects located in the West Oakland Specific Plan area) or higher. The HVAC system shall include the following features: Installation of a high efficiency filter and/or carbon filter to filter particulates and other chemical matter from entering the building. Either high efficiency particulate air (HEPA) filters or American Society of Heating, Refrigeration, and Air-Conditioning Engineers (ASHRAE) certified 85% supply filters shall be used.
- Maintain, repair and/or replace HVAC system on an ongoing and as needed basis or shall prepare an operation and maintenance manual for the HVAC system and the filter. The manual shall include the operating instructions and the maintenance and replacement schedule. This manual shall be included in the Covenants, Conditions and Restrictions (CC&Rs) for residential projects and/or distributed to the building maintenance staff. In addition, the applicant shall prepare a separate homeowners manual. The manual shall contain the operating instructions and the maintenance and replacement schedule for the HVAC system and the filters.
- Install passive electrostatic filtering systems with low air velocities (i.e., less than 1 mph).
- Individual and common exterior open space and outdoor activity areas proposed as part of individual projects shall be located as far away as possible within the project site boundary, face away major freeways, and shall be shielded from the source (i.e., the roadway) of air pollution by buildings or otherwise buffered to further reduce air pollution for project occupants.
- Locate air intakes and design windows to reduce PM exposure (e.g., windows nearest to the roadway do not open).
- If sensitive receptors are located near a distribution center, residents shall not be located immediately adjacent to a loading dock or where trucks concentrate to deliver goods.
- Sensitive receptors within buildings shall be located in areas upwind of major roadway traffic to reduce exposure to reduce cancer risk levels and exposure to PM2.5.
- Planting trees and/or vegetation between sensitive receptors and pollution source. Trees that are best suited to trapping PM shall be planted, including one or more of the following species: Pine (Pinus nigra var. maritima), Cypress (X Cupressocyparis leylandii), Hybrid popular (Populus deltoids X trichocarpa), California pepper tree (Schinus molle) and Redwoods (Sequoia sempervirens).
- Loading docks shall be required to include electric hookups for visiting trucks.
- Idling of heavy duty diesel trucks at these locations shall be prohibited or limited to no more than 2 minutes.
- If within the project site, existing and new diesel generators shall meet ARB's Tier 4 emission standards.

• Emissions from diesel trucks shall be reduced through establishing truck routes to avoid residential neighborhoods or other land uses serving sensitive populations, such as hospitals, schools, and child care centers. A truck route program, along with truck calming, parking and delivery restrictions, shall be implemented to direct traffic activity at non-permitted sources and large construction projects. These BMPs are consistent with recommendations in BAAQMD's CEQA guidelines and Planning Healthy Places (BAAQMD 2011, BAAQMD 2016).
Climate Change and Greenhouse Gases
Mitigation Measure 2.5-4(b) Implementing agencies and/or project sponsors shall implement measures, where feasible and necessary based on project- and site-specific considerations that include, but are not limited to, coordination with BCDC, Caltrans, local jurisdictions (cities and counties), and other transportation agencies to develop Transportation Asset Management Plans that consider the potential impacts of sea level rise over the life cycle of threatened assets.
Mitigation Measure 2.5-4(c) Implementing agencies shall require project sponsors to incorporate the appropriate adaptation strategy or strategies to reduce the impacts of sea level rise on specific local transportation and land use development projects, where feasible, based on project- and site-specific considerations. Potential adaptation strategies are included in the Adaptation Strategies (see Appendix F of this Draft EIR).

As the above table indicates, the DEIR fails to provide sufficient information and analysis to determine Project consistency with the required mitigation measures of the Plan Bay Area 2040. Thus, we cannot verify that the Project is consistent with the Plan, as claimed in the DEIR. As a result, we recommend that the Project not be approved until an updated EIR provide further information and analysis in order to conclude consistency for the proposed Project.

SWAPE has received limited discovery regarding this project. Additional information may become available in the future; thus, we retain the right to revise or amend this report when additional information becomes available. Our professional services have been performed using that degree of care and skill ordinarily exercised, under similar circumstances, by reputable environmental consultants practicing in this or similar localities at the time of service. No other warranty, expressed or implied, is made as to the scope of work, work methodologies and protocols, site conditions, analytical testing results, and findings presented. This report reflects efforts which were limited to information that was reasonably accessible at the time of the work, and may contain informational gaps, inconsistencies, or otherwise be incomplete due to the unavailability or uncertainty of information obtained or provided by third parties.

Sincerely,

Matt Hagemann, P.G., C.Hg.

Paul E. Rosenfeld, Ph.D.

SWAPE Technical Consultation, Data Analysis and Litigation Support for the Environment

1640 5th St.., Suite 204 Santa
Santa Monica, California 90401
Tel: (949) 887-9013
Email: mhagemann@swape.com

Matthew F. Hagemann, P.G., C.Hg., QSD, QSP

Geologic and Hydrogeologic Characterization
Industrial Stormwater Compliance
Investigation and Remediation Strategies
Litigation Support and Testifying Expert
CEQA Review

Education:

M.S. Degree, Geology, California State University Los Angeles, Los Angeles, CA, 1984.
B.A. Degree, Geology, Humboldt State University, Arcata, CA, 1982.

Professional Certifications:

California Professional Geologist
California Certified Hydrogeologist
Qualified SWPPP Developer and Practitioner

Professional Experience:

Matt has 25 years of experience in environmental policy, assessment and remediation. He spent nine years with the U.S. EPA in the RCRA and Superfund programs and served as EPA's Senior Science Policy Advisor in the Western Regional Office where he identified emerging threats to groundwater from perchlorate and MTBE. While with EPA, Matt also served as a Senior Hydrogeologist in the oversight of the assessment of seven major military facilities undergoing base closure. He led numerous enforcement actions under provisions of the Resource Conservation and Recovery Act (RCRA) while also working with permit holders to improve hydrogeologic characterization and water quality monitoring.

Matt has worked closely with U.S. EPA legal counsel and the technical staff of several states in the application and enforcement of RCRA, Safe Drinking Water Act and Clean Water Act regulations. Matt has trained the technical staff in the States of California, Hawaii, Nevada, Arizona and the Territory of Guam in the conduct of investigations, groundwater fundamentals, and sampling techniques.

Positions Matt has held include:

- Founding Partner, Soil/Water/Air Protection Enterprise (SWAPE) (2003 – present);
- Geology Instructor, Golden West College, 2010 – 2014;
- Senior Environmental Analyst, Komex H2O Science, Inc. (2000 -- 2003);

- Executive Director, Orange Coast Watch (2001 – 2004);
- Senior Science Policy Advisor and Hydrogeologist, U.S. Environmental Protection Agency (1989–1998);
- Hydrogeologist, National Park Service, Water Resources Division (1998 – 2000);
- Adjunct Faculty Member, San Francisco State University, Department of Geosciences (1993 – 1998);
- Instructor, College of Marin, Department of Science (1990 – 1995);
- Geologist, U.S. Forest Service (1986 – 1998); and
- Geologist, Dames & Moore (1984 – 1986).

Senior Regulatory and Litigation Support Analyst:

With SWAPE, Matt's responsibilities have included:

- Lead analyst and testifying expert in the review of over 100 environmental impact reports since 2003 under CEQA that identify significant issues with regard to hazardous waste, water resources, water quality, air quality, Valley Fever, greenhouse gas emissions, and geologic hazards. Make recommendations for additional mitigation measures to lead agencies at the local and county level to include additional characterization of health risks and implementation of protective measures to reduce worker exposure to hazards from toxins and Valley Fever.
- Stormwater analysis, sampling and best management practice evaluation at industrial facilities.
- Manager of a project to provide technical assistance to a community adjacent to a former Naval shipyard under a grant from the U.S. EPA.
- Technical assistance and litigation support for vapor intrusion concerns.
- Lead analyst and testifying expert in the review of environmental issues in license applications for large solar power plants before the California Energy Commission.
- Manager of a project to evaluate numerous formerly used military sites in the western U.S.
- Manager of a comprehensive evaluation of potential sources of perchlorate contamination in Southern California drinking water wells.
- Manager and designated expert for litigation support under provisions of Proposition 65 in the review of releases of gasoline to sources drinking water at major refineries and hundreds of gas stations throughout California.
- Expert witness on two cases involving MTBE litigation.
- Expert witness and litigation support on the impact of air toxins and hazards at a school.
- Expert witness in litigation at a former plywood plant.

With Komex H2O Science Inc., Matt's duties included the following:

- Senior author of a report on the extent of perchlorate contamination that was used in testimony by the former U.S. EPA Administrator and General Counsel.
- Senior researcher in the development of a comprehensive, electronically interactive chronology of MTBE use, research, and regulation.
- Senior researcher in the development of a comprehensive, electronically interactive chronology of perchlorate use, research, and regulation.
- Senior researcher in a study that estimates nationwide costs for MTBE remediation and drinking water treatment, results of which were published in newspapers nationwide and in testimony against provisions of an energy bill that would limit liability for oil companies.
- Research to support litigation to restore drinking water supplies that have been contaminated by MTBE in California and New York.

- Expert witness testimony in a case of oil production-related contamination in Mississippi.
- Lead author for a multi-volume remedial investigation report for an operating school in Los Angeles that met strict regulatory requirements and rigorous deadlines.

- Development of strategic approaches for cleanup of contaminated sites in consultation with clients and regulators.

Executive Director:

As Executive Director with Orange Coast Watch, Matt led efforts to restore water quality at Orange County beaches from multiple sources of contamination including urban runoff and the discharge of wastewater. In reporting to a Board of Directors that included representatives from leading Orange County universities and businesses, Matt prepared issue papers in the areas of treatment and disinfection of wastewater and control of the discharge of grease to sewer systems. Matt actively participated in the development of countywide water quality permits for the control of urban runoff and permits for the discharge of wastewater. Matt worked with other nonprofits to protect and restore water quality, including Surfrider, Natural Resources Defense Council and Orange County CoastKeeper as well as with business institutions including the Orange County Business Council.

Hydrogeology:

As a Senior Hydrogeologist with the U.S. Environmental Protection Agency, Matt led investigations to characterize and cleanup closing military bases, including Mare Island Naval Shipyard, Hunters Point Naval Shipyard, Treasure Island Naval Station, Alameda Naval Station, Moffett Field, Mather Army Airfield, and Sacramento Army Depot. Specific activities were as follows:

- Led efforts to model groundwater flow and contaminant transport, ensured adequacy of monitoring networks, and assessed cleanup alternatives for contaminated sediment, soil, and groundwater.
- Initiated a regional program for evaluation of groundwater sampling practices and laboratory analysis at military bases.
- Identified emerging issues, wrote technical guidance, and assisted in policy and regulation development through work on four national U.S. EPA workgroups, including the Superfund Groundwater Technical Forum and the Federal Facilities Forum.

At the request of the State of Hawaii, Matt developed a methodology to determine the vulnerability of groundwater to contamination on the islands of Maui and Oahu. He used analytical models and a GIS to show zones of vulnerability, and the results were adopted and published by the State of Hawaii and County of Maui.

As a hydrogeologist with the EPA Groundwater Protection Section, Matt worked with provisions of the Safe Drinking Water Act and NEPA to prevent drinking water contamination. Specific activities included the following:

- Received an EPA Bronze Medal for his contribution to the development of national guidance for the protection of drinking water.
- Managed the Sole Source Aquifer Program and protected the drinking water of two communities through designation under the Safe Drinking Water Act. He prepared geologic reports, conducted public hearings, and responded to public comments from residents who were very concerned about the impact of designation.

- Reviewed a number of Environmental Impact Statements for planned major developments, including large hazardous and solid waste disposal facilities, mine reclamation, and water transfer.

Matt served as a hydrogeologist with the RCRA Hazardous Waste program. Duties were as follows:

- Supervised the hydrogeologic investigation of hazardous waste sites to determine compliance with Subtitle C requirements.
- Reviewed and wrote "part B" permits for the disposal of hazardous waste.
- Conducted RCRA Corrective Action investigations of waste sites and led inspections that formed the basis for significant enforcement actions that were developed in close coordination with U.S. EPA legal counsel.
- Wrote contract specifications and supervised contractor's investigations of waste sites.

With the National Park Service, Matt directed service-wide investigations of contaminant sources to prevent degradation of water quality, including the following tasks:

- Applied pertinent laws and regulations including CERCLA, RCRA, NEPA, NRDA, and the Clean Water Act to control military, mining, and landfill contaminants.
- Conducted watershed-scale investigations of contaminants at parks, including Yellowstone and Olympic National Park.
- Identified high-levels of perchlorate in soil adjacent to a national park in New Mexico and advised park superintendent on appropriate response actions under CERCLA.
- Served as a Park Service representative on the Interagency Perchlorate Steering Committee, a national workgroup.
- Developed a program to conduct environmental compliance audits of all National Parks while serving on a national workgroup.
- Co-authored two papers on the potential for water contamination from the operation of personal watercraft and snowmobiles, these papers serving as the basis for the development of nation-wide policy on the use of these vehicles in National Parks.
- Contributed to the Federal Multi-Agency Source Water Agreement under the Clean Water Action Plan.

Policy:

Served senior management as the Senior Science Policy Advisor with the U.S. Environmental Protection Agency, Region 9. Activities included the following:

- Advised the Regional Administrator and senior management on emerging issues such as the potential for the gasoline additive MTBE and ammonium perchlorate to contaminate drinking water supplies.
- Shaped EPA's national response to these threats by serving on workgroups and by contributing to guidance, including the Office of Research and Development publication, Oxygenates in Water: Critical Information and Research Needs.
- Improved the technical training of EPA's scientific and engineering staff.
- Earned an EPA Bronze Medal for representing the region's 300 scientists and engineers in negotiations with the Administrator and senior management to better integrate scientific principles into the policy-making process.
- Established national protocol for the peer review of scientific documents.

Geology:

With the U.S. Forest Service, Matt led investigations to determine hillslope stability of areas proposed for timber harvest in the central Oregon Coast Range. Specific activities were as follows:

- Mapped geology in the field, and used aerial photographic interpretation and mathematical models to determine slope stability.
- Coordinated his research with community members who were concerned with natural resource protection.
- Characterized the geology of an aquifer that serves as the sole source of drinking water for the city of Medford, Oregon.

As a consultant with Dames and Moore, Matt led geologic investigations of two contaminated sites (later listed on the Superfund NPL) in the Portland, Oregon, area and a large hazardous waste site in eastern Oregon. Duties included the following:

- Supervised year-long effort for soil and groundwater sampling.
- Conducted aquifer tests.
- Investigated active faults beneath sites proposed for hazardous waste disposal.

Teaching:

From 1990 to 1998, Matt taught at least one course per semester at the community college and university levels:

- At San Francisco State University, held an adjunct faculty position and taught courses in environmental geology, oceanography (lab and lecture), hydrogeology, and groundwater contamination.
- Served as a committee member for graduate and undergraduate students.
- Taught courses in environmental geology and oceanography at the College of Marin.

Matt taught physical geology (lecture and lab and introductory geology at Golden West College in Huntington Beach, California from 2010 to 2014.

Invited Testimony, Reports, Papers and Presentations:

Hagemann, M.F., 2008. Disclosure of Hazardous Waste Issues under CEQA. Presentation to the Public Environmental Law Conference, Eugene, Oregon.

Hagemann, M.F., 2008. Disclosure of Hazardous Waste Issues under CEQA. Invited presentation to U.S. EPA Region 9, San Francisco, California.

Hagemann, M.F., 2005. Use of Electronic Databases in Environmental Regulation, Policy Making and Public Participation. Brownfields 2005, Denver, Coloradao.

Hagemann, M.F., 2004. Perchlorate Contamination of the Colorado River and Impacts to Drinking Water in Nevada and the Southwestern U.S. Presentation to a meeting of the American Groundwater Trust, Las Vegas, NV (served on conference organizing committee).

Hagemann, M.F., 2004. Invited testimony to a California Senate committee hearing on air toxins at schools in Southern California, Los Angeles.

Brown, A., Farrow, J., Gray, A. and **Hagemann, M.**, 2004. An Estimate of Costs to Address MTBE Releases from Underground Storage Tanks and the Resulting Impact to Drinking Water Wells. Presentation to the Ground Water and Environmental Law Conference, National Groundwater Association.

Hagemann, M.F., 2004. Perchlorate Contamination of the Colorado River and Impacts to Drinking Water in Arizona and the Southwestern U.S. Presentation to a meeting of the American Groundwater Trust, Phoenix, AZ (served on conference organizing committee).

Hagemann, M.F., 2003. Perchlorate Contamination of the Colorado River and Impacts to Drinking Water in the Southwestern U.S. Invited presentation to a special committee meeting of the National Academy of Sciences, Irvine, CA.

Hagemann, M.F., 2003. Perchlorate Contamination of the Colorado River. Invited presentation to a tribal EPA meeting, Pechanga, CA.

Hagemann, M.F., 2003. Perchlorate Contamination of the Colorado River. Invited presentation to a meeting of tribal repesentatives, Parker, AZ.

Hagemann, M.F., 2003. Impact of Perchlorate on the Colorado River and Associated Drinking Water Supplies. Invited presentation to the Inter-Tribal Meeting, Torres Martinez Tribe.

Hagemann, M.F., 2003. The Emergence of Perchlorate as a Widespread Drinking Water Contaminant. Invited presentation to the U.S. EPA Region 9.

Hagemann, M.F., 2003. A Deductive Approach to the Assessment of Perchlorate Contamination. Invited presentation to the California Assembly Natural Resources Committee.

Hagemann, M.F., 2003. Perchlorate: A Cold War Legacy in Drinking Water. Presentation to a meeting of the National Groundwater Association.

Hagemann, M.F., 2002. From Tank to Tap: A Chronology of MTBE in Groundwater. Presentation to a meeting of the National Groundwater Association.

Hagemann, M.F., 2002. A Chronology of MTBE in Groundwater and an Estimate of Costs to Address Impacts to Groundwater. Presentation to the annual meeting of the Society of Environmental Journalists.

Hagemann, M.F., 2002. An Estimate of the Cost to Address MTBE Contamination in Groundwater (and Who Will Pay). Presentation to a meeting of the National Groundwater Association.

Hagemann, M.F., 2002. An Estimate of Costs to Address MTBE Releases from Underground Storage Tanks and the Resulting Impact to Drinking Water Wells. Presentation to a meeting of the U.S. EPA and State Underground Storage Tank Program managers.

Hagemann, M.F., 2001. From Tank to Tap: A Chronology of MTBE in Groundwater. Unpublished report.

Hagemann, M.F., 2001. Estimated Cleanup Cost for MTBE in Groundwater Used as Drinking Water. Unpublished report.

Hagemann, M.F., 2001. Estimated Costs to Address MTBE Releases from Leaking Underground Storage Tanks. Unpublished report.

Hagemann, M.F., and VanMouwerik, M., 1999. Potential Water Quality Concerns Related to Snowmobile Usage. Water Resources Division, National Park Service, Technical Report.

VanMouwerik, M. and **Hagemann, M.F**. 1999, Water Quality Concerns Related to Personal Watercraft Usage. Water Resources Division, National Park Service, Technical Report.

Hagemann, M.F., 1999, Is Dilution the Solution to Pollution in National Parks? The George Wright Society Biannual Meeting, Asheville, North Carolina.

Hagemann, M.F., 1997, The Potential for MTBE to Contaminate Groundwater. U.S. EPA Superfund Groundwater Technical Forum Annual Meeting, Las Vegas, Nevada.

Hagemann, M.F., and Gill, M., 1996, Impediments to Intrinsic Remediation, Moffett Field Naval Air Station, Conference on Intrinsic Remediation of Chlorinated Hydrocarbons, Salt Lake City.

Hagemann, M.F., Fukunaga, G.L., 1996, The Vulnerability of Groundwater to Anthropogenic Contaminants on the Island of Maui, Hawaii. Hawaii Water Works Association Annual Meeting, Maui, October 1996.

Hagemann, M. F., Fukanaga, G. L., 1996, Ranking Groundwater Vulnerability in Central Oahu, Hawaii. Proceedings, Geographic Information Systems in Environmental Resources Management, Air and Waste Management Association Publication VIP-61.

Hagemann, M.F., 1994. Groundwater Characterization and Cleanup at Closing Military Bases in California. Proceedings, California Groundwater Resources Association Meeting.

Hagemann, M.F. and Sabol, M.A., 1993. Role of the U.S. EPA in the High Plains States Groundwater Recharge Demonstration Program. Proceedings, Sixth Biennial Symposium on the Artificial Recharge of Groundwater.

Hagemann, M.F., 1993. U.S. EPA Policy on the Technical Impracticability of the Cleanup of DNAPL-contaminated Groundwater. California Groundwater Resources Association Meeting.

Hagemann, M.F., 1992. Dense Nonaqueous Phase Liquid Contamination of Groundwater: An Ounce of Prevention... Proceedings, Association of Engineering Geologists Annual Meeting, v. 35.

Other Experience:

Selected as subject matter expert for the California Professional Geologist licensing examination, 2009-2011.

SWAPE Technical Consultation, Data Analysis and Litigation Support for the Environment

SOIL WATER AIR PROTECTION ENTERPRISE
2656 29th Street, Suite 201
Santa Monica, California 90405
Attn: Paul Rosenfeld, Ph.D.
Mobil: (310) 795-2335
Office: (310) 452-5555
Fax: (310) 452-5550
Email: prosenfeld@swape.com

Paul Rosenfeld, Ph.D.

Chemical Fate and Transport & Air Dispersion Modeling

Principal Environmental Chemist

Risk Assessment & Remediation Specialist

Education:

Ph.D. Soil Chemistry, University of Washington, 1999. Dissertation on VOC filtration.
M.S. Environmental Science, U.C. Berkeley, 1995. Thesis on organic waste economics.
B.A. Environmental Studies, U.C. Santa Barbara, 1991. Thesis on wastewater treatment.

Professional Experience:

Dr. Rosenfeld is the Co-Founder and Principal Environmental Chemist at Soil Water Air Protection Enterprise (SWAPE). His focus is the fate and transport of environmental contaminants, risk assessment, and ecological restoration. Dr. Rosenfeld has evaluated and modeled emissions from unconventional oil drilling, oil spills, boilers, incinerators and other industrial and agricultural sources relating to nuisance and personal injury. His project experience ranges from monitoring and modeling of pollution sources as they relate to human and ecological health. Dr. Rosenfeld has investigated and designed remediation programs and risk assessments for contaminated sites containing petroleum, chlorinated solvents, pesticides, radioactive waste, PCBs, PAHs, dioxins, furans, volatile organics, semi-volatile organics, perchlorate, heavy metals, asbestos, PFOA, unusual polymers, MtBE, fuel oxygenates and odor. Dr. Rosenfeld has evaluated greenhouse gas emissions using various modeling programs recommended by California Air Quality Management Districts.

Professional History:

Soil Water Air Protection Enterprise (SWAPE); 2003 to present; Principal and Founding Partner
UCLA School of Public Health; 2007 to 2011; Lecturer (Assistant Researcher)
UCLA School of Public Health; 2003 to 2006; Adjunct Professor
UCLA Environmental Science and Engineering Program; 2002-2004; Doctoral Intern Coordinator
UCLA Institute of the Environment, 2001-2002; Research Associate
Komex H_2O Science, 2001 to 2003; Senior Remediation Scientist
National Groundwater Association, 2002-2004; Lecturer
San Diego State University, 1999-2001; Adjunct Professor
Anteon Corp., San Diego, 2000-2001; Remediation Project Manager
Ogden (now Amec), San Diego, 2000-2000; Remediation Project Manager
Bechtel, San Diego, California, 1999 – 2000; Risk Assessor
King County, Seattle, 1996 – 1999; Scientist
James River Corp., Washington, 1995-96; Scientist
Big Creek Lumber, Davenport, California, 1995; Scientist
Plumas Corp., California and USFS, Tahoe 1993-1995; Scientist
Peace Corps and World Wildlife Fund, St. Kitts, West Indies, 1991-1993; Scientist
Bureau of Land Management, Kremmling Colorado 1990; Scientist

Publications:

Chen, J. A., Zapata, A R., Sutherland, A. J., Molmen, D. R,. Chow, B. S., Wu, L. E., **Rosenfeld, P. E.,** Hesse, R. C., (2012) Sulfur Dioxide and Volatile Organic Compound Exposure To A Community In Texas City Texas Evaluated Using Aermod and Empirical Data. *American Journal of Environmental Science*, 8(6), 622-632.

Rosenfeld, P.E. & Feng, L. (2011). *The Risks of Hazardous Waste.* Amsterdam: Elsevier Publishing.

Cheremisinoff, N.P., & **Rosenfeld, P.E.** (2011). *Handbook of Pollution Prevention and Cleaner Production: Best Practices in the Agrochemical Industry*, Amsterdam: Elsevier Publishing.

Gonzalez, J., Feng, L., Sutherland, A., Waller, C., Sok, H., Hesse, R., **Rosenfeld, P.** (2010). PCBs and Dioxins/Furans in Attic Dust Collected Near Former PCB Production and Secondary Copper Facilities in Sauget, IL. *Procedia Environmental Sciences*. 113–125.

Feng, L., Wu, C., Tam, L., Sutherland, A.J., Clark, J.J., **Rosenfeld, P.E.** (2010). Dioxin and Furan Blood Lipid and Attic Dust Concentrations in Populations Living Near Four Wood Treatment Facilities in the United States. *Journal of Environmental Health*. 73(6), 34-46.

Cheremisinoff, N.P., & **Rosenfeld, P.E.** (2010). *Handbook of Pollution Prevention and Cleaner Production: Best Practices in the Wood and Paper Industries.* Amsterdam: Elsevier Publishing.

Cheremisinoff, N.P., & **Rosenfeld, P.E.** (2009). *Handbook of Pollution Prevention and Cleaner Production: Best Practices in the Petroleum Industry*. Amsterdam: Elsevier Publishing.

Wu, C., Tam, L., Clark, J., **Rosenfeld, P**. (2009). Dioxin and furan blood lipid concentrations in populations living near four wood treatment facilities in the United States. *WIT Transactions on Ecology and the Environment, Air Pollution,* 123 (17), 319-327.

Tam L. K.., Wu C. D., Clark J. J. and **Rosenfeld, P.E.** (2008). A Statistical Analysis Of Attic Dust And Blood Lipid Concentrations Of Tetrachloro-p-Dibenzodioxin (TCDD) Toxicity Equivalency Quotients (TEQ) In Two Populations Near Wood Treatment Facilities. *Organohalogen Compounds*, 70, 002252-002255.

Tam L. K.., Wu C. D., Clark J. J. and **Rosenfeld, P.E.** (2008). Methods For Collect Samples For Assessing Dioxins And Other Environmental Contaminants In Attic Dust: A Review. *Organohalogen Compounds*, 70, 000527-000530.

Hensley, A.R. A. Scott, J. J. J. Clark, **Rosenfeld, P.E.** (2007). Attic Dust and Human Blood Samples Collected near a Former Wood Treatment Facility. *Environmental Research*. 105, 194-197.

Rosenfeld, P.E., J. J. J. Clark, A. R. Hensley, M. Suffet. (2007). The Use of an Odor Wheel Classification for Evaluation of Human Health Risk Criteria for Compost Facilities. *Water Science & Technology* 55(5), 345-357.

Rosenfeld, P. E., M. Suffet. (2007). The Anatomy Of Odour Wheels For Odours Of Drinking Water, Wastewater, Compost And The Urban Environment. *Water Science & Technology* 55(5), 335-344.

Sullivan, P. J. Clark, J.J.J., Agardy, F. J., **Rosenfeld, P.E.** (2007). *Toxic Legacy, Synthetic Toxins in the Food, Water, and Air in American Cities.* Boston Massachusetts: Elsevier Publishing,

Rosenfeld P.E., and Suffet, I.H. (Mel) (2007). Anatomy of an Odor Wheel. *Water Science and Technology*.

Rosenfeld, P.E., Clark, J.J.J., Hensley A.R., Suffet, I.H. (Mel) (2007). The use of an odor wheel classification for evaluation of human health risk criteria for compost facilities. *Water Science And Technology*.

Rosenfeld, P.E., and Suffet I.H. (2004). Control of Compost Odor Using High Carbon Wood Ash. *Water Science and Technology*. 49(9),171-178.

Rosenfeld P. E., J.J. Clark, I.H. (Mel) Suffet (2004). The Value of An Odor-Quality-Wheel Classification Scheme For The Urban Environment. *Water Environment Federation's Technical Exhibition and Conference (WEFTEC) 2004.* New Orleans, October 2-6, 2004.

Rosenfeld, P.E., and Suffet, I.H. (2004). Understanding Odorants Associated With Compost, Biomass Facilities, and the Land Application of Biosolids. *Water Science and Technology*. 49(9), 193-199.

Rosenfeld, P.E., and Suffet I.H. (2004). Control of Compost Odor Using High Carbon Wood Ash, *Water Science and Technology*, 49(9), 171-178.

Rosenfeld, P. E., Grey, M. A., Sellew, P. (2004). Measurement of Biosolids Odor and Odorant Emissions from Windrows, Static Pile and Biofilter. *Water Environment Research*. 76(4), 310-315.

Rosenfeld, P.E., Grey, M and Suffet, M. (2002). Compost Demonstration Project, Sacramento California Using High-Carbon Wood Ash to Control Odor at a Green Materials Composting Facility. *Integrated Waste Management Board Public Affairs Office*, Publications Clearinghouse (MS–6), Sacramento, CA Publication #442-02-008.

Rosenfeld, P.E., and C.L. Henry. (2001). Characterization of odor emissions from three different biosolids. *Water Soil and Air Pollution*. 127(1-4), 173-191.

Rosenfeld, P.E., and Henry C. L., (2000). Wood ash control of odor emissions from biosolids application. *Journal of Environmental Quality.* 29, 1662-1668.

Rosenfeld, P.E., C.L. Henry and D. Bennett. (2001). Wastewater dewatering polymer affect on biosolids odor emissions and microbial activity. *Water Environment Research*. 73(4), 363-367.

Rosenfeld, P.E., and C.L. Henry. (2001). Activated Carbon and Wood Ash Sorption of Wastewater, Compost, and Biosolids Odorants. *Water Environment Research*, 73, 388-393.

Rosenfeld, P.E., and Henry C. L., (2001). High carbon wood ash effect on biosolids microbial activity and odor. *Water Environment Research*. 131(1-4), 247-262.

Chollack, T. and **P. Rosenfeld. (**1998). Compost Amendment Handbook For Landscaping. Prepared for and distributed by the City of Redmond, Washington State.

Rosenfeld, P. E. (1992). The Mount Liamuiga Crater Trail. *Heritage Magazine of St. Kitts*, 3(2).

Rosenfeld, P. E. (1993). High School Biogas Project to Prevent Deforestation On St. Kitts. *Biomass Users Network*, 7(1).

Rosenfeld, P. E. (1998). Characterization, Quantification, and Control of Odor Emissions From Biosolids Application To Forest Soil. Doctoral Thesis. University of Washington College of Forest Resources.

Rosenfeld, P. E. (1994). Potential Utilization of Small Diameter Trees on Sierra County Public Land. Masters thesis reprinted by the Sierra County Economic Council. Sierra County, California.

Rosenfeld, P. E. (1991). How to Build a Small Rural Anaerobic Digester & Uses Of Biogas In The First And Third World. Bachelors Thesis. University of California.

Presentations:

Rosenfeld, P.E., Sutherland, A; Hesse, R.; Zapata, A. (October 3-6, 2013). Air dispersion modeling of volatile organic emissions from multiple natural gas wells in Decatur, TX. *44th Western Regional Meeting, American Chemical Society.* Lecture conducted from Santa Clara, CA.

Sok, H.L.; Waller, C.C.; Feng, L.; Gonzalez, J.; Sutherland, A.J.; Wisdom-Stack, T.; Sahai, R.K.; Hesse, R.C.; **Rosenfeld, P.E.** (June 20-23, 2010). Atrazine: A Persistent Pesticide in Urban Drinking Water. *Urban Environmental Pollution*. Lecture conducted from Boston, MA.

Feng, L.; Gonzalez, J.; Sok, H.L.; Sutherland, A.J.; Waller, C.C.; Wisdom-Stack, T.; Sahai, R.K.; La, M.; Hesse, R.C.; **Rosenfeld, P.E.** (June 20-23, 2010). Bringing Environmental Justice to East St. Louis, Illinois. *Urban Environmental Pollution.* Lecture conducted from Boston, MA.

Rosenfeld, P.E. (April 19-23, 2009). Perfluoroctanoic Acid (PFOA) and Perfluoroactane Sulfonate (PFOS) Contamination in Drinking Water From the Use of Aqueous Film Forming Foams (AFFF) at Airports in the United States. *2009 Ground Water Summit and 2009 Ground Water Protection Council Spring Meeting*, Lecture conducted from Tuscon, AZ.

Rosenfeld, P.E. (April 19-23, 2009). Cost to Filter Atrazine Contamination from Drinking Water in the United States" Contamination in Drinking Water From the Use of Aqueous Film Forming Foams (AFFF) at Airports in the United States. *2009 Ground Water Summit and 2009 Ground Water Protection Council Spring Meeting*. Lecture conducted from Tuscon, AZ.

Wu, C., Tam, L., Clark, J., **Rosenfeld, P**. (20-22 July, 2009). Dioxin and furan blood lipid concentrations in populations living near four wood treatment facilities in the United States. Brebbia, C.A. and Popov, V., eds., *Air Pollution XVII: Proceedings of the Seventeenth International Conference on Modeling, Monitoring and Management of Air Pollution*. Lecture conducted from Tallinn, Estonia.

Rosenfeld, P. E. (October 15-18, 2007). Moss Point Community Exposure To Contaminants From A Releasing Facility. *The 23rd Annual International Conferences on Soils Sediment and Water.* Platform lecture conducted from University of Massachusetts, Amherst MA.

Rosenfeld, P. E. (October 15-18, 2007). The Repeated Trespass of Tritium-Contaminated Water Into A Surrounding Community Form Repeated Waste Spills From A Nuclear Power Plant*. The 23rd Annual International Conferences on Soils Sediment and Water*. Platform lecture conducted from University of Massachusetts, Amherst MA.

Rosenfeld, P. E. (October 15-18, 2007). Somerville Community Exposure To Contaminants From Wood Treatment Facility Emissions. The *23rd Annual International Conferences on Soils Sediment and Water*. Lecture conducted from University of Massachusetts, Amherst MA.

Rosenfeld P. E. (March 2007). Production, Chemical Properties, Toxicology, & Treatment Case Studies of 1,2,3-Trichloropropane (TCP). *The Association for Environmental Health and Sciences (AEHS) Annual Meeting*. Lecture conducted from San Diego, CA.

Rosenfeld P. E. (March 2007). Blood and Attic Sampling for Dioxin/Furan, PAH, and Metal Exposure in Florala, Alabama. *The AEHS Annual Meeting.* Lecture conducted from San Diego, CA.

Hensley A.R., Scott, A., **Rosenfeld P.E.,** Clark, J.J.J. (August 21 – 25, 2006). Dioxin Containing Attic Dust And Human Blood Samples Collected Near A Former Wood Treatment Facility. *The 26th International Symposium on Halogenated Persistent Organic Pollutants – DIOXIN2006*. Lecture conducted from Radisson SAS Scandinavia Hotel in Oslo Norway.

Hensley A.R., Scott, A., **Rosenfeld P.E.,** Clark, J.J.J. (November 4-8, 2006). Dioxin Containing Attic Dust And Human Blood Samples Collected Near A Former Wood Treatment Facility. *APHA 134 Annual Meeting & Exposition.* Lecture conducted from Boston Massachusetts.

Paul Rosenfeld Ph.D. (October 24-25, 2005). Fate, Transport and Persistence of PFOA and Related Chemicals. Mealey's C8/PFOA. *Science, Risk & Litigation Conference.* Lecture conducted from The Rittenhouse Hotel, Philadelphia, PA.

Paul Rosenfeld Ph.D. (September 19, 2005). Brominated Flame Retardants in Groundwater: Pathways to Human Ingestion, *Toxicology and Remediation PEMA Emerging Contaminant Conference*. Lecture conducted from Hilton Hotel, Irvine California.

Paul Rosenfeld Ph.D. (September 19, 2005). Fate, Transport, Toxicity, And Persistence of 1,2,3-TCP. *PEMA Emerging Contaminant Conference.* Lecture conducted from Hilton Hotel in Irvine, California.

Paul Rosenfeld Ph.D. (September 26-27, 2005). Fate, Transport and Persistence of PDBEs. *Mealey's Groundwater Conference.* Lecture conducted from Ritz Carlton Hotel, Marina Del Ray, California.

Paul Rosenfeld Ph.D. (June 7-8, 2005). Fate, Transport and Persistence of PFOA and Related Chemicals. *International Society of Environmental Forensics: Focus On Emerging Contaminants*. Lecture conducted from Sheraton Oceanfront Hotel, Virginia Beach, Virginia.

Paul Rosenfeld Ph.D. (July 21-22, 2005). Fate Transport, Persistence and Toxicology of PFOA and Related Perfluorochemicals. *2005 National Groundwater Association Ground Water And Environmental Law Conference*. Lecture conducted from Wyndham Baltimore Inner Harbor, Baltimore Maryland.

Paul Rosenfeld Ph.D. (July 21-22, 2005). Brominated Flame Retardants in Groundwater: Pathways to Human Ingestion, Toxicology and Remediation. *2005 National Groundwater Association Ground Water and Environmental Law Conference.* Lecture conducted from Wyndham Baltimore Inner Harbor, Baltimore Maryland.

Paul Rosenfeld, Ph.D. and James Clark Ph.D. and Rob Hesse R.G. (May 5-6, 2004). Tert-butyl Alcohol Liability and Toxicology, A National Problem and Unquantified Liability. *National Groundwater Association. Environmental Law Conference*. Lecture conducted from Congress Plaza Hotel, Chicago Illinois.

Paul Rosenfeld, Ph.D. (March 2004). Perchlorate Toxicology. *Meeting of the American Groundwater Trust*. Lecture conducted from Phoenix Arizona.

Hagemann, M.F., **Paul Rosenfeld, Ph.D.** and Rob Hesse (2004). Perchlorate Contamination of the Colorado River. *Meeting of tribal representatives*. Lecture conducted from Parker, AZ.

Paul Rosenfeld, Ph.D. (April 7, 2004). A National Damage Assessment Model For PCE and Dry Cleaners. *Drycleaner Symposium. California Ground Water Association*. Lecture conducted from Radison Hotel, Sacramento, California.

Rosenfeld, P. E., Grey, M., (June 2003) Two stage biofilter for biosolids composting odor control. *Seventh International In Situ And On Site Bioremediation Symposium Battelle Conference* Orlando, FL.

Paul Rosenfeld, Ph.D. and James Clark Ph.D. (February 20-21, 2003) Understanding Historical Use, Chemical Properties, Toxicity and Regulatory Guidance of 1,4 Dioxane. *National Groundwater Association. Southwest Focus Conference. Water Supply and Emerging Contaminants*.. Lecture conducted from Hyatt Regency Phoenix Arizona.

Paul Rosenfeld, Ph.D. (February 6-7, 2003). Underground Storage Tank Litigation and Remediation. *California CUPA Forum*. Lecture conducted from Marriott Hotel, Anaheim California.

Paul Rosenfeld, Ph.D. (October 23, 2002) Underground Storage Tank Litigation and Remediation. *EPA Underground Storage Tank Roundtable*. Lecture conducted from Sacramento California.

Rosenfeld, P.E. and Suffet, M. (October 7- 10, 2002). Understanding Odor from Compost, *Wastewater and Industrial Processes. Sixth Annual Symposium On Off Flavors in the Aquatic Environment. International Water Association*. Lecture conducted from Barcelona Spain.

Rosenfeld, P.E. and Suffet, M. (October 7- 10, 2002). Using High Carbon Wood Ash to Control Compost Odor. *Sixth Annual Symposium On Off Flavors in the Aquatic Environment. International Water Association*. Lecture conducted from Barcelona Spain.

Rosenfeld, P.E. and Grey, M. A. (September 22-24, 2002). Biocycle Composting For Coastal Sage Restoration. *Northwest Biosolids Management Association*. Lecture conducted from Vancouver Washington..

Rosenfeld, P.E. and Grey, M. A. (November 11-14, 2002). Using High-Carbon Wood Ash to Control Odor at a Green Materials Composting Facility. *Soil Science Society Annual Conferenc*e. Lecture conducted from Indianapolis, Maryland.

Rosenfeld. P.E. (September 16, 2000). Two stage biofilter for biosolids composting odor control. *Water Environment Federation.* Lecture conducted from Anaheim California.

Rosenfeld. P.E. (October 16, 2000). Wood ash and biofilter control of compost odor. *Biofest.* Lecture conducted from Ocean Shores, California.

Rosenfeld, P.E. (2000). Bioremediation Using Organic Soil Amendments. *California Resource Recovery Association*. Lecture conducted from Sacramento California.

Rosenfeld, P.E., C.L. Henry, R. Harrison. (1998). Oat and Grass Seed Germination and Nitrogen and Sulfur Emissions Following Biosolids Incorporation With High-Carbon Wood-Ash. *Water Environment Federation 12th Annual Residuals and Biosolids Management Conference Proceedings*. Lecture conducted from Bellevue Washington.

Rosenfeld, P.E., and C.L. Henry. (1999). An evaluation of ash incorporation with biosolids for odor reduction. *Soil Science Society of America*. Lecture conducted from Salt Lake City Utah.

Rosenfeld, P.E., C.L. Henry, R. Harrison. (1998). Comparison of Microbial Activity and Odor Emissions from Three Different Biosolids Applied to Forest Soil. *Brown and Caldwell.* Lecture conducted from Seattle Washington.

Rosenfeld, P.E., C.L. Henry. (1998). Characterization, Quantification, and Control of Odor Emissions from Biosolids Application To Forest Soil. *Biofest.* Lecture conducted from Lake Chelan, Washington.

Rosenfeld, P.E, C.L. Henry, R. Harrison. (1998). Oat and Grass Seed Germination and Nitrogen and Sulfur Emissions Following Biosolids Incorporation With High-Carbon Wood-Ash. Water Environment Federation 12th Annual Residuals and Biosolids Management Conference Proceedings. Lecture conducted from Bellevue Washington.

Rosenfeld, P.E., C.L. Henry, R. B. Harrison, and R. Dills. (1997). Comparison of Odor Emissions From Three Different Biosolids Applied to Forest Soil. *Soil Science Society of America*. Lecture conducted from Anaheim California.

Teaching Experience:

UCLA Department of Environmental Health (Summer 2003 through 20010) Taught Environmental Health Science 100 to students, including undergrad, medical doctors, public health professionals and nurses. Course focused on the health effects of environmental contaminants.

National Ground Water Association, Successful Remediation Technologies. Custom Course in Sante Fe, New Mexico. May 21, 2002. Focused on fate and transport of fuel contaminants associated with underground storage tanks.

National Ground Water Association; Successful Remediation Technologies Course in Chicago Illinois. April 1, 2002. Focused on fate and transport of contaminants associated with Superfund and RCRA sites.

California Integrated Waste Management Board, April and May, 2001. Alternative Landfill Caps Seminar in San Diego, Ventura, and San Francisco. Focused on both prescriptive and innovative landfill cover design.

UCLA Department of Environmental Engineering, February 5, 2002. Seminar on Successful Remediation Technologies focusing on Groundwater Remediation.

University Of Washington, Soil Science Program, Teaching Assistant for several courses including: Soil Chemistry, Organic Soil Amendments, and Soil Stability.

U.C. Berkeley, Environmental Science Program Teaching Assistant for Environmental Science 10.

Academic Grants Awarded:

California Integrated Waste Management Board. $41,000 grant awarded to UCLA Institute of the Environment. Goal: To investigate effect of high carbon wood ash on volatile organic emissions from compost. 2001.

Synagro Technologies, Corona California: $10,000 grant awarded to San Diego State University.
Goal: investigate effect of biosolids for restoration and remediation of degraded coastal sage soils. 2000.

King County, Department of Research and Technology, Washington State. $100,000 grant awarded to University of Washington: Goal: To investigate odor emissions from biosolids application and the effect of polymers and ash on VOC emissions. 1998.

Northwest Biosolids Management Association, Washington State. $20,000 grant awarded to investigate effect of polymers and ash on VOC emissions from biosolids. 1997.

James River Corporation, Oregon: $10,000 grant was awarded to investigate the success of genetically engineered Poplar trees with resistance to round-up. 1996.

United State Forest Service, Tahoe National Forest: $15,000 grant was awarded to investigating fire ecology of the Tahoe National Forest. 1995.

Kellogg Foundation, Washington D.C. $500 grant was awarded to construct a large anaerobic digester on St. Kitts in West Indies. 1993.

Deposition and/or Trial Testimony:

In The Superior Court of the State of California, County of Alameda
Charles Spain., Plaintiff vs. Thermo Fisher Scientific, et al., Defendants
Case No.: RG14711115
Rosenfeld Deposition, September, 2015

In The Iowa District Court In And For Poweshiek County
Russell D. Winburn, et al., Plaintiffs vs. Doug Hoksbergen, et al., Defendants
Case No.: LALA002187
Rosenfeld Deposition, August 2015

In The Iowa District Court For Wapello County
Jerry Dovico, et al., Plaintiffs vs. Valley View Sine LLC, et al., Defendants
Law No,: LALA105144 - Division A
Rosenfeld Deposition, August 2015

In The Iowa District Court For Wapello County
Doug Pauls, et al.,, et al., Plaintiffs vs. Richard Warren, et al., Defendants
Law No,: LALA105144 - Division A
Rosenfeld Deposition, August 2015

In The Circuit Court of Ohio County, West Virginia
Robert Andrews, et al. v. Antero, et al.
Civil Action N0. 14-C-30000
Rosenfeld Deposition, June 2015

In The Third Judicial District County of Dona Ana, New Mexico
Betty Gonzalez, et al. Plaintiffs vs. Del Oro Dairy, Del Oro Real Estate LLC, Jerry Settles and Deward DeRuyter, Defendants
Rosenfeld Deposition: July 2015

In The Iowa District Court For Muscatine County
Laurie Freeman et. al. Plaintiffs vs. Grain Processing Corporation, Defendant
Case No 4980
Rosenfeld Deposition: May 2015

In the Circuit Court of the 17th Judicial Circuit, in and For Broward County, Florida
Walter Hinton, et. al. Plaintiff, vs. City of Fort Lauderdale, Florida, a Municipality, Defendant.
Case Number CACE07030358 (26)
Rosenfeld Deposition: December 2014

In the United States District Court Western District of Oklahoma
Tommy McCarty, et al., Plaintiffs, v. Oklahoma City Landfill, LLC d/b/a Southeast Oklahoma City Landfill, et al. Defendants.
Case No. 5:12-cv-01152-C
Rosenfeld Deposition: July 2014

In the County Court of Dallas County Texas
Lisa Parr et al, *Plaintiff*, vs. Aruba et al, *Defendant.*
Case Number cc-11-01650-E
Rosenfeld Deposition: March and September 2013
Rosenfeld Trial: April 2014

In the Court of Common Pleas of Tuscarawas County Ohio

John Michael Abicht, et al., *Plaintiffs,* vs. Republic Services, Inc., et al., *Defendants*
Case Number: 2008 CT 10 0741 (Cons. w/ 2009 CV 10 0987)
Rosenfeld Deposition: October 2012

In the Court of Common Pleas for the Second Judicial Circuit, State of South Carolina, County of Aiken
David Anderson, et al., *Plaintiffs*, vs. Norfolk Southern Corporation, et al., *Defendants*.
Case Number: 2007-CP-02-1584

In the Circuit Court of Jefferson County Alabama
Jaeanette Moss Anthony, et al., *Plaintiffs*, vs. Drummond Company Inc., et al., *Defendants*
Civil Action No. CV 2008-2076
Rosenfeld Deposition: September 2010

In the Ninth Judicial District Court, Parish of Rapides, State of Louisiana
Roger Price, et al., *Plaintiffs*, vs. Roy O. Martin, L.P., et al., *Defendants*.
Civil Suit Number 224,041 Division G
Rosenfeld Deposition: September 2008

In the United States District Court, Western District Lafayette Division
Ackle et al., *Plaintiffs*, vs. Citgo Petroleum Corporation, et al., *Defendants*.
Case Number 2:07CV1052
Rosenfeld Deposition: July 2009

In the United States District Court for the Southern District of Ohio
Carolyn Baker, et al., *Plaintiffs*, vs. Chevron Oil Company, et al., *Defendants*.
Case Number 1:05 CV 227
Rosenfeld Deposition: July 2008

In the Fourth Judicial District Court, Parish of Calcasieu, State of Louisiana
Craig Steven Arabie, et al., *Plaintiffs*, vs. Citgo Petroleum Corporation, et al., *Defendants*.
Case Number 07-2738 G

In the Fourteenth Judicial District Court, Parish of Calcasieu, State of Louisiana
Leon B. Brydels, *Plaintiffs*, vs. Conoco, Inc., et al*., Defendants*.
Case Number 2004-6941 Division A

In the District Court of Tarrant County, Texas, 153rd Judicial District
Linda Faust, *Plaintiff*, vs. Burlington Northern Santa Fe Rail Way Company, Witco Chemical Corporation A/K/A Witco Corporation, Solvents and Chemicals, Inc. and Koppers Industries, Inc., *Defendants*.
Case Number 153-212928-05
Rosenfeld Deposition: December 2006, October 2007
Rosenfeld Trial: January 2008

In the Superior Court of the State of California in and for the County of San Bernardino
Leroy Allen, et al., *Plaintiffs*, vs. Nutro Products, Inc., a California Corporation and DOES 1 to 100, inclusive, *Defendants*.
John Loney, Plaintiff, vs. James H. Didion, Sr.; Nutro Products, Inc.; DOES 1 through 20, inclusive, *Defendants*.
Case Number VCVVS044671
Rosenfeld Deposition: December 2009
Rosenfeld Trial: March 2010

In the United States District Court for the Middle District of Alabama, Northern Division
James K. Benefield, et al., *Plaintiffs*, vs. International Paper Company, *Defendant*.
Civil Action Number 2:09-cv-232-WHA-TFM
Rosenfeld Deposition: July 2010, June 2011

In the Superior Court of the State of California in and for the County of Los Angeles
Leslie Hensley and Rick Hensley, *Plaintiffs*, vs. Peter T. Hoss, as trustee on behalf of the Cone Fee Trust; Plains Exploration & Production Company, a Delaware corporation; Rayne Water Conditioning, Inc., a California Corporation; and DOES 1 through 100, *Defendants.*
Case Number SC094173
Rosenfeld Deposition: September 2008, October 2008

In the Superior Court of the State of California in and for the County of Santa Barbara, Santa Maria Branch
Clifford and Shirley Adelhelm, et al., all individually, *Plaintiffs*, vs. Unocal Corporation, a Delaware Corporation; Union Oil Company of California, a California corporation; Chevron Corporation, a California corporation; ConocoPhillips, a Texas corporation; Kerr-McGee Corporation, an Oklahoma corporation; and DOES 1 though 100, *Defendants.*
Case Number 1229251 (Consolidated with case number 1231299)
Rosenfeld Deposition: January 2008

In the United States District Court for Eastern District of Arkansas, Eastern District of Arkansas
Harry Stephens Farms, Inc, and Harry Stephens, individual and as managing partner of Stephens Partnership, *Plaintiffs*, vs. Helena Chemical Company, and Exxon Mobil Corp., successor to Mobil Chemical Co., *Defendants.*
Case Number 2:06-CV-00166 JMM (Consolidated with case number 4:07CV00278 JMM)
Rosenfeld Deposition: July 2010

In the United States District Court for the Western District of Arkansas, Texarkana Division
Rhonda Brasel, et al., *Plaintiffs*, vs. Weyerhaeuser Company and DOES 1 through 100, *Defendants.*
Civil Action Number 07-4037
Rosenfeld Deposition: March 2010
Rosenfeld Trial: October 2010

In the District Court of Texas 21st Judicial District of Burleson County
Dennis Davis, *Plaintiff*, vs. Burlington Northern Santa Fe Rail Way Company, *Defendant.*
Case Number 25,151
Rosenfeld Trial: May 2009

In the United States District Court of Southern District of Texas Galveston Division
Kyle Cannon, Eugene Donovan, Genaro Ramirez, Carol Sassler, and Harvey Walton, each Individually and on behalf of those similarly situated, *Plaintiffs,* vs. BP Products North America, Inc., *Defendant.*
Case 3:10-cv-00622
Rosenfeld Deposition: February 2012
Rosenfeld Trial: April 2013

In the Circuit Court of Baltimore County Maryland
Philip E. Cvach, II et al., *Plaintiffs* vs. Two Farms, Inc. d/b/a Royal Farms, Defendants
Case Number: 03-C-12-012487 OT
Rosenfeld Deposition: September 2013

Exhibit G

APPENDIX C: 1987 MEMORANDUM OF UNDERSTANDING

On February 17, 1987, UCSF entered into a Memorandum of Understanding (MOU) with the City and County of San Francisco regarding communication and oversight of University master planning, construction and real estate utilization. The MOU was signed by the Chancellor and the Vice Chancellor for Resource Management and Planning Services of UCSF and by the Mayor and Director of Planning of San Francisco. Because of its brevity and importance, the MOU is included here in its entirety:

I. The intent of this memorandum of understanding is to foster harmonious relations between the City and County of San Francisco (hereafter City) and the University of California, San Francisco (hereafter UCSF) regarding the growth and development of UCSF facilities within the City's boundaries.

II. Each party is chartered to operate under provisions of the State Constitution which govern their cooperation with neighboring communities, and these factors are recognized by all parties.

   1. The University of California, Board of Regents, is the overseeing body of UCSF.
   2. Transfer of title to any lands of UCSF must be accomplished in accordance with existing statutes or through the Board of Regents.
   3. The City Charter spells out the duties, responsibilities, and limitations of the Mayor, Board of Supervisors, and Department of City Planning.
   4. The Director of the Department of City Planning is responsible to the City Planning Commission and he is required at all times to represent the best City planning interest.
   5. Existing direct relationships between City departments and UCSF programs located at UCSF will continue without reference to this memorandum of agreement. This specifically includes all health programs and routine operational matters.

III. The principal concerns of this agreement are the responsibilities of the City and UCSF for oversight of land uses and the development, maintenance and use of physical facilities.

   1. The City is responsible for the reasonable development, maintenance and reuse of land in accordance with the Master Plan of the City and County, as adopted and modified from time to time by the City Planning Commission and as expressed in the City's zoning ordinance. The City requires that all major institutions submit institutional master plans to the City Planning Commission for their review.
   2. UCSF maintains a health science center and the requisite facilities to provide educational programs, research and medical services, which may require expansion, contraction or modification over time. The UCSF institutional master plan is submitted to the University of California, Board of Regents for review and approval. The UCSF campus agrees to continue submitting its long-range development plan to the City Planning Commission.

IV. In an effort to improve communication between UCSF and the City regarding changes in the land use and development plans of UCSF, the parties to this memorandum agree that:

   1. UCSF staff and the City Planning Commission staff will meet at least once a year to review long-range development plans for UCSF and City development and services plans. Such meetings will be convened by UCSF and the results of them reported in writing to the City Planning Commission at a regularly scheduled meeting.
   2. UCSF will advise the City in writing of all matters concerning master planning, construction and real property utilization initiated by UCSF which may have an impact on the City. The City Planning Commission will review such proposals and advise UCSF in writing as to the conformance of such development with the Master Plan of San Francisco and Planning Code Section 304.5 (Institutional Master Plans) with recommendations, if any, for amendment to the proposal.
   3. UCSF will modify its 1982 Long Range Development Plan, as required over time, and the City Planning Commission may hold at least one public hearing on all such modifications prior to preparation of written comments.
   4. UCSF shall notify the City of and the City shall attend hearings conducted by UCSF pursuant to the California Environmental Quality Act.
   5. UCSF will maintain campus advisory committees, composed of neighborhood representatives, at both its Parnassus Heights and Laurel Heights campuses, and will invite the City Planning Commission, Municipal Railway and Department of Public Works to participate in those meetings. The Mayor will urge those City departments to participate on the Committees.
   6. The City Planning Commission will advise UCSF in

writing of all matters coming to the Commission's attention concerning master plans, construction and real estate utilization which may have an impact on UCSF.

7. Should the City Planning Commission and UCSF disagree on any matter which is the subject of this MOU, either party may request the participation of the Mayor and the Chancellor in attempting to resolve the dispute.

V. This memorandum does not confer or surrender any authority beyond that already possessed by each party concerned. Further, it does not abrogate any requirement by either party to coordinate matters of master planning with the Association of Bay Area Governments (ABAG) or other appropriate agencies.

1. For the City, the Director of City Planning shall be the responsible designee.
2. For UCSF, the Vice Chancellor for Resource Management and Planning Services shall be the responsible designee.

Exhibit H

THE CASE FOR HOUSING IMPACTS ASSESSMENT:

THE HUMAN HEALTH AND SOCIAL IMPACTS OF INADEQUATE HOUSING AND THEIR CONSIDERATION IN CEQA POLICY AND PRACTICE

PHES TECHNICAL RESEARCH REPORT
MAY 2004

CITY AND COUNTY OF SAN FRANCISCO
DEPARTMENT OF PUBLIC HEALTH
OCCUPATIONAL & ENVIRONMENTAL HEALTH SECTION
PROGRAM ON HEALTH, EQUITY, & SUSTAINABILITY

Contents

CONTACT INFORMATION

Rajiv.Bhatia@sfdph.org
Carolina.Guzman@sfdph.org

Program on Health, Equity, and Sustainability
San Francisco Department of Public Health
1390 Market Street, Suite 822
San Francisco, CA 94102

INTRODUCTION

The California Environmental Quality Act (CEQA)[1] requires governmental agencies to provide a public accounting of all potentially adverse impacts of decisions that change the environment. While some consider CEQA to be concerned exclusively with the physical environment, the aims of CEQA extend to human well being. For example, CEQA's policy goals include maintaining "…conditions under which man and nature can exist in productive harmony to fulfill the social and economic requirements of present and future generations," and "..,providing a decent home and satisfying living environment for every Californian." (California Government Code §21000) Under CEQA, a local agency must consider reasonably foreseeable "… environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly."[2]

Traditionally, health and human impact assessment within environmental review has focused on hazardous environmental agents such as air pollutants. While such impacts are important, the relationships between the physical environment and human health include many other neglected dimensions.

Unmet housing needs in San Francisco result in particularly significant public health costs. Inadequate or unaffordable housing forces San Francisco residents into crowded or substandard conditions; requires them to compromise access to jobs and services, and quality education; and requires them to work multiple jobs to make ends meet. The Department of Public Health witnesses these effects when we care for the homeless, in the course of our enforcement of environmental health and housing standards, and through our efforts to improve the housing of those with environmentally related illnesses such as asthma.

Unmet housing needs also have indirect environmental and economic consequences. High housing costs are disincentives for business development or expansion which also means reduced economic opportunities for residents. High cost housing in regional job centers such as San Francisco is one factor that drives development of lower cost housing on the urban fringe, contributing to traffic congestion and air pollution, as well as the loss of regional farmland and open space.[3]

As one strategy to ensure adequate affordable housing in San Francisco, the San Francisco Department of Health, in partnership with the City's Department of Planning, has researched how environmental impact analysis might more

[1] CEQA, similar to NEPA, predated the more proscriptive environmental regulatory approaches such as the Clean Water Act aiming instead to ensure transparency and accountability in decision making. CEQA requires public agencies to produce an Environmental Impact Report (EIR) prior to making public decision that may have significant adverse environmental effects. (California Public Resources Code, Environmental Protection, §21000) An EIR must analysis on all potentially significant adverse environmental impacts, feasible alternatives, and steps to avoid or limit impacts. If an EIR concludes that a project would have significant impacts, the agency can not approve it until it either they determine that mitigation or alternatives are infeasible or that the project's benefits outweigh the adverse impacts.

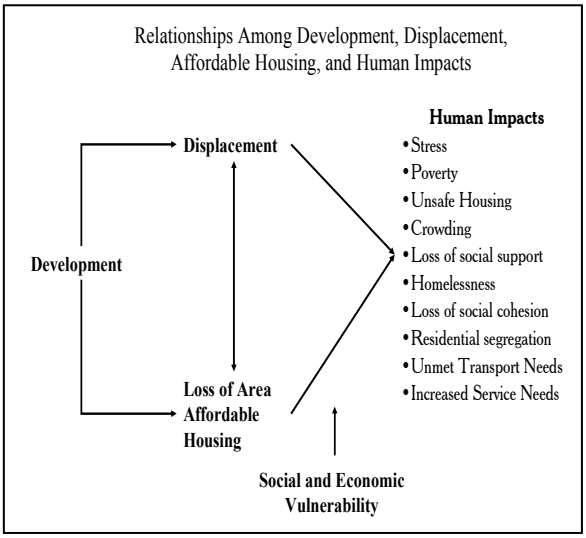
[2] CEQA Guidelines. Title 14. California Code of Regulations. (Accessed at http://ceres.ca.gov/topic/env_law/ceqa/guidelines/)

[3] http://www.brookings.edu/views/speeches/downs/20030529_downs.htm

comprehensively account for impacts on affordable housing and residential displacement.

CEQA guidelines allow cities to determine their own impacts of concern, screening criteria, assessment and evaluative methodologies, and preferred mitigation measures. In addition, though the guidelines provide a list of potential adverse impacts on the environment they do not provide a way of judging whether the effects are significant in a particular set of circumstances. One way for local jurisdictions and public agencies to ensure consistent and objective determinations in their environmental review is to adopt a 'threshold of significance.'[4]

CEQA authorizes local governments to adopt by "…ordinance, resolution, rule, or regulation" locally specific "objectives, criteria, and procedures for the evaluation of projects." (California Government Code §21082). These 'thresholds of significance' are qualitative or quantitative standards that provide local agencies a way to differentiate whether a particular environmental effect is significant. Thresholds may be based on health based standards, service capacity standards, ecological tolerance standards, policies and goals within the city's general plan, or any other standard based on environmental quality. Ideally, threshold development should involve public participation and the documentation of a threshold should include (1) a definition for the effect (2) the reasons the effect is significant (3) the criteria at which effect becomes significant (4) references and sources (5) potential mitigation measures if available.



Methods to consider impacts on housing affordability and residential displacement exist; however, these methods have not been applied to impact assessment practice in San Francisco. In California, several local jurisdictions (Los Angeles, Santa Barbara, and LakeTahoe) have adopted comprehensive, environmental review guidelines which include thresholds of significance for housing impacts. San Francisco adopted level of service standards (LOS) for the evaluation of impacts on automobile and transit in 2002 but does not have consistent evaluative criteria for several other important environmental effects included effects on housing.

This technical report outlines several ways that impacts on housing affordability and residential displacement can be included in the process of environmental review. It also provides the groundwork for developing local significance thresholds criteria for housing impacts. We have organized this document into three sections: (1) Social and health consequences of housing affordability and residential displacement; (2)

[4] Thresholds of Significance: Criteria for Defining Environmental Significance. CEQA Technical Advice Series Govenor's Office of Planning and Research 1994 Accessed May 24th 2004 at: http://ceres.ca.gov/topic/env_law/ceqa/more/tas/threshld.pdf

Interpretation of CEQA policy and guidelines with regards to the analysis of social, health, and environmental justice impacts; (3) Public agency guidelines for affordable housing and displacement impact assessment.

The first section provides a scan of the public health and social science research that relates affordability and displacement to adverse human outcomes. We organized this section using a public health framework that relates project development to residential displacement and housing affordability and these effects to indirect adverse human impacts. (The framework used in this report is illustrated in the figure above.) The second section considers the impacts on affordability and displacement as indirect social impacts, as indirect human health impacts, as environmental justice impacts, and as impacts that affect long term environmental policy goals. The third section provides a scan of impact assessment methods and practice applicable to housing impacts analysis bringing together a number of federal, state, and local tools and guidelines.

SECTION I. SOCIAL AND HEALTH CONSEQUENCES OF HOUSING AFFORDABILITY AND RESIDENTIAL DISPLACEMENT

The pathways between affordable housing, residential displacement, and human health and well being are numerous and complex. The impacts of any particular project or program that affects housing affordability or displaces residents depend on both contextual and individual factors including the availability of affordable housing units, the extent of relocation assistance provided, the income and savings of displaced residents, and the availability of social support networks.

This section provides a summary of available evidence on the adverse human consequences of housing affordability and residential displacement. Sources include case studies, interviews, and studies on homelessness, and public health and social science research.

Unmet Needs for Affordable Housing in California and San Francisco

According to *Slum Housing in LA*, a recent publication by UCLA's Advanced Policy Institute, the Federal goal of "securing the health and living standards of its people…" has only been met for upper and moderate income groups, while communities that are poor in both rural and inner city areas lack adequate housing. [5] Three in ten US households have housing affordability problems.

The affordable housing crisis is particularly acute in California. In San Francisco, only 7.3% of households currently earn enough to afford the median sale price of housing.[6] In addition, the fair market rent for a two-bedroom apartment is $1,904 which is affordable only to those who make 90% of the average family's median income of $86,100.[7] Exacerbating this situation, the gap between the minimum wage and the minimum hourly wage required to afford adequate housing has increased. Currently, over 35,000 low income renters pay more than 50% of their income in rent. Even individuals earning modest wages, such as, public service employees and those in the construction trades simply cannot afford to live where they work.[8]

A related factor, affecting low income renters, is the unmet demand for subsidized housing programs. In California, over two-thirds of qualifying low income households remains on waiting lists for housing assistance.[9] The state has 186,000 rental units housing 450,000 low income people which benefited from public finance. About 70% of this stock, over 120,000 units, represents housing in the HUD Section 8 program for which rent subsidy contracts are expiring. The conversion of subsidized housing will further aggravate unmet demand for low income housing.

[5] Richman N, Pitkin B. Understanding Slum: The Case of Los Angeles, USA. 2003 UCLA Advanced Policy Institute. Los Angeles, CA.

[6] San Francisco Planning Department. Update of the Housing Element of the General Plan. (Accessed at: http://www.ci.sf.ca.us/planning/citywide/c1_housing_element.htm)

[7] National Low Income Housing Coalition Out of Reach 2003: America's Housing Wage Climbs. (Accessed at: http://www.nlihc.org/oor2003/)

[8] Governor' Environmental Goals and Policy Report. Office of Planning and Research 2003

[9] Forbes, Elaine. 2000

While the population of San Francisco is growing, San Francisco is not currently meeting the housing production goals of moderate income, low income and very low income communities. The Mayor's Office of Housing estimates that the City needs to build 19,000 units of affordable housing between 2001 and 2005 to meet its needs. Furthermore, according to the Housing Element of the General Plan, the strongest job growth is expected in the service and retail sectors; however, much of that growth is represented by low and medium wage jobs including cashiers, waiters and cooks, sales people and clerks, and painters, carpenters and electricians.

The Relationship between Displacement and Affordable Housing

Residential displacement has become a critical issue in California where housing shortage disproportionately affects low income and minority populations. Displacement can occur in the context of demolition or redevelopment of residential property or the conversion of rental units to ownership housing. Displacement also occurs in the context of gentrification when neighborhoods change in a way that inflates rents. Structural forces that contribute to displacement of individuals and families and unsatisfactory relocation in San Francisco include the relatively high cost of housing relative to incomes, the large unmet need for housing particularly at lower income levels, and the high cost of land and housing. Given that San Francisco is a setting with a limited supply of affordable housing, residents displaced through eviction or redevelopment are unlikely to be successfully relocated into adequate and affordable housing replacement housing.

Human Health Impacts of Inadequate Housing

Residential displacement or the permanent loss of area affordable housing can be expected to lead to diverse health effects. Both displaced residents and those entering the housing market may have to pay more for housing.[10] Some may accept affordable but inadequate, substandard, or poorer quality housing. Some may move out of the city or region while others may move into a temporary living situation with a friend or family member. Finally, some may become homeless. Low income individuals and families are more susceptible to adverse consequences after displacement as they have limited options for relocation.

Stress Displacement may increase levels of psychological and physiological stress, for example, by creating a new economic strain among low income individuals. If residents are displaced away from jobs or schools, longer commutes may be a further source of stress and reduce time for leisure or family activities. For children, frequent family relocation leads to children's grade repetitions, school suspensions, and emotional and behavioral problems.[11] Living in resource poor neighborhoods, frequent school changes, and substandard housing all contribute to poor child development and school

[10] Hartman, Chester. Comment on "Neighborhood revitalization and displacement: A review of the evidence. Journal of the American Planning Association. 1979;45:488-491.

[11] Cooper, Merrill. Housing Affordability: A Children's Issue. Canadian Policy Research Networks Discussion Paper. Ottawa. 2001

performance.[12]

A number of scientific studies have demonstrated health consequences of psychosocial stress. For example, a randomized study of healthy human volunteers demonstrated that chronic stress doubled the rate at which inoculation with a common cold virus led to a clinical infection. [13] Other studies have linked the experience of stress with chronic diseases including heart disease, hypertension, and diabetes.[14] Among pregnant women, stress has also been associated with a greater likelihood for pre-term delivery and low birth weight birth – both factors that potentially lead to developmental delays and increased infant morbidity and mortality.

Poverty There is little doubt that poverty leads to poor health. Numerous research studies in diverse countries show that poverty contributes to a poorer subjective sense of health, higher mortality, less emotional stability, worse chronic conditions, and poorer physical functioning.[15]

Unaffordable housing is both a dimension of poverty and a contributor to poverty. Households with incomes several times the full-time minimum wage can pay more than half of their incomes for housing.[16] When housing is unaffordable, people often sacrifice other material needs including food, clothing, and health care services. Nationally, those with incomes in the bottom fifth of the income distribution and paying 50% of their incomes for housing have an average of $417 to cover all non-housing monthly expenses.[17] Lack of affordable housing has also been linked to inadequate nutrition, especially among children. A recent survey of American cities found that low paying jobs and high housing costs are the most frequently cited reasons for hunger.[18] Children from low-income families receiving housing subsidies showed increased growth compared with children whose families were on a subsidy waiting list, an observation consistent with the idea that subsidies provide a protective effect against childhood malnutrition.

Unaffordable housing may add to psychosocial stress. People required to work extra hours or at multiple jobs may sacrifice personal leisure family relationships. Time pressured parents may choose either more punitive or low-effort strategies to resolve conflict with children.[19] Studies have shown that economic strains such as being unable to pay the bills cause depression in mothers and harsh parenting styles. Displacement and relocation may also result in job loss with potential further aggravation of

[12] Ross, DP & Roberts, P. Income and child well being: A new perspective on the policy debate. Canadian Council for Social Development. Ottawa. 1999.
[13] Cohen, Sheldon et al. Types of Stressor that increase susceptibility to the common cold in Healthy Adults. Health Psychology. 1998; 17(3):214-223.
[14] McEwen, Bruce E. Protective and damaging effects of stress mediators. New England Journal of Medicine. 1998; 338(3): 171-179.
[15] Phipps, Shelly. The Impact of Poverty on Health: A Scan of the Research Literature. Ottawa. Canadian Institute for Health Information 2003.
[16] The State of the Nation's Housing. Joint Center for Housing Studies of Harvard University. 2003.
[17]
[18] Sandel, M, Sharfstein, J, Shaw, R. There's no place like home: How America's Housing Crisis Threatens our Children. Housing America. San Francisco. 1999.
[19] Dunn, James R. A population health approach to housing: A framework for research. Report prepared for the National Housing research Committee and the Canada Mortgage and Housing Committee. University of Calgary. 2002.

economic strain and psychosocial stress.

Overcrowding Statewide, 24% of renter households are overcrowded while in San Francisco over 30% of renter households are characterized as overcrowded.[20] [21] Families frequently double up as a way to cope with the lack of affordable housing. Similarly, displaced residents find temporary lodging with families or friends. Overcrowding results in respiratory infections in adults and ear infection in children.[22] Overcrowding also means the lack of quiet space for children to do homework, negatively impacting their development, education, and future life opportunities.[23]

Housing Safety Over half of the San Francisco's housing was built over 50 years ago and requires significant rehabilitation to maintain habitability; 94% of the housing stock was built before 1978. Most of the city's pre-1950 dilapidated housing stock is located in low-income neighborhoods. A number of environmental conditions in older and poorly maintained housing affect health. Inadequate heating can lead to overexposure to cold. Poorly maintained paint leads to lead poisoning. Other unsafe conditions include exposed heating sources, unprotected windows and slippery surfaces that increase risks for injuries. Older units and low-income units tend also to have a greater likelihood of deferred maintenance.

Indoor Air Quality Irritants and allergens present in one's home environments contribute to asthma. Some of the most important allergens implicated in the development and recurrence of asthma include house dust mites, cockroach antigens, cat dander, mold spores, and pollens.[24] Old carpeting serves as a reservoir for dust, allergens and chemicals. Kitchens and baths, particularly in older housing stock, often lack adequate ventilation increasing problems associated with moisture and mold.

Since 1999, SFDPH has conducted several hundred assessments for asthmatic children and adults and identified through evaluation research the role of housing affordability as a barrier to reducing asthma triggers in the home. While SFDPH enforces laws to ensure the safety and habitability of housing, inspectors have found many instances where substandard and unhealthy conditions exist yet tenants are reluctant to initiate enforcement actions. Commonly, tenants are fearful of landlord reprisal or eviction in an unaffordable housing market.

Social Support If displaced residents are forced to relocate outside of their neighborhood, valuable supportive family and community relationships can be lost both for those leaving and well as for those remaining behind. Strong social relationships and community cohesion are protective of health in multiple ways. Neighbors, friends, and family provide material as well as emotional support. Support, perceived or provided, can buffer stressful

[20] Govenor's Environmental Goals and Policy Report. Op Cit.
[21] Based on San Francisco data from the 1999 American Housing Survey. (Accessed at: http://www.census.gov/hhes/www/ahs.html)
[22] Krieger, J & Higgens, DL. Housing and Health: Time again for Public Health Action. American Journal of Public Health. 2002; 92: 758-768.
[23] Cooper, M. op cit.
[24] Institute of Medicine. Clearing the Air: Asthma and Indoor Air Exposures. National Academy Press. Washington D.C. 2000.

situations, prevents damaging feelings of isolation, and contributes to a sense of self-esteem and value.[25] The magnitude of the effect of social support on health is substantial and has been illustrated by several prospective long term studies in the United States. For example, in the Alameda County Study, those with fewer social contacts (e.g. marriage, family, friends, and group membership) had twice the risk of early death, even accounting for income, race, smoking, obesity, and exercise.[26]

Homelessness One of the most severe consequences of both unaffordable housing and displacement is homelessness. Hunger and homelessness are on the rise in major American cities, according to a 2003 survey by the U.S. Conference of Mayors.[27] Requests for emergency shelter assistance increased by an average of 13 percent in the 25 large cities surveyed. Twenty-three participating cities reported that lack of affordable housing was the leading cause of homelessness.

Over 350,000 Californians are estimated to be homeless.[28] A particularly disturbing trend is the rise of family homelessness. It is estimated that between 80,000 and 95,000 homeless children exist in California.[29] The USCM survey documents that Eighty-four percent of the cities have turned away homeless families from emergency shelters due to lack of resources.

Homelessness contributes to a number of other well described physical, behavioral and mental health problems in adults and children. Lack of housing and the overcrowding found in temporary housing for the homeless have been found to contribute to morbidity from respiratory infections and activation of tuberculosis. Substandard housing, such as that used by the homeless population, often lack safe drinking water and hot water for washing; often have ineffective waste disposal, intrusion by disease vectors (e.g., insects and rats); and often have inadequate food storage, all of which have long been identified as contributing to the spread of infectious diseases. [30] A 1994 study of children living in homeless shelters in the Los Angeles area found that the vast majority (78%) of homeless children interviewed suffered from depression, a behavioral problem, or severe academic delay.[31] Among sheltered homeless men and women, age adjusted death rates are several fold higher than in the general population.[32]

Homelessness is strongly linked to hunger. Temporary housing for homeless children often lacks cooking facilities.[33] In the 2003 US

[25] Cohen, S, Underwood, LG, Gottlieb, BH. Social Support Measurement and Intervention. Oxford University Press. New York. 2000.
[26] Berkman LF, Syme SL Social networks, host resistance, and mortality: a nine-year follow-up study of Alameda County residents. American Journal of Epidemiology. 1979; 109(2):186-204.
[27] The United States Conference of Mayors Hunger and Homelessness Study December 2003.
[28] Governor's Environmental Goals and Policy Report. Op Cit.
[29] Governor's Environmental Goals and Policy Report Op Cit.
[30] US Conference of Mayors
[31] Zima BT, Wells KB, Freeman HE. Emotional and behavioral problems and severe academic delays among sheltered homeless children in Los Angeles County. American Journal of Public Health. February 1994 Vol 84: 260-264
[32] Barrow, SM, Herman, DB, Cordova P, Stuening, EL. Mortality among Homeless Shelter Residents in New York City. American Journal of Public Health. 1999; 89: 529-534.
[33] Krieger J, Higgins DL. Housing and Health: Time Again for Public Health Action. American Journal of Public Health. May 2002, Vol 92, No. 5: 758-768

Conference of Mayors' (USCM) survey, requests for emergency food assistance increased by an average of 17 percent over the past year. The USCM survey finds that 59 percent of individuals requesting emergency food assistance were members of families with children and their parents, and that 39 percent of the adults requesting such assistance were employed. Eighty-seven percent of the cities surveyed expect that requests for emergency food assistance will increase again over the next year. Ninety-one percent of cities participating in the survey expect that requests for emergency food assistance by families with children will increase next year. Eighty-eight percent expect that requests for emergency shelter will increase next year, and 80% expect requests for shelter by homeless families will increase in 2004.

Social Cohesion One of the most significant effects of eviction and displacement may be the erosion of social capital and social cohesion which are social indicators strongly associated with health, education, and neighborhood safety.[34]

The New York Times recently profiled a community, Franklin Square, as one of the few places in the NY area where housing affordability is promoted resulting in the integration of generations residing side-by-side. In addition to the richness of sharing experiences across generations, the Franklin Square community benefits from long-term residents who invest in maintaining the built environment, invest in the community, and contribute to community cohesion and youth development:

> "'[Franklin Square] It's just a wonderful, very stable community,' said Julie Soffientini, an assistant school superintendent who moved in 30 years ago and raised two daughters with her husband, Raymond. She said she appreciated the clean streets, well-kept properties and convenient local shopping."
>
> "Pupils begin at the Franklin Square Union Free School District, an elementary district with an enrollment of 1,975 in three schools, all for kindergarten through Grade 6. Statistics released by the state Department of Education in October showed that 99.3 percent of fourth grade students in the district met or exceeded state standards in math. Elementary school students in the Franklin Square district consistently score above state averages on other standardized tests."

The example provided above illustrates the positive impacts on society by long-term resident investment: cleaner streets, resulting in reduced cost of City-subsidized loitering cleaning; higher school performance, particularly among the younger aged-group, which results in higher school completion.

In contrast, the erosion of neighborhoods as a result of forced displacement results in the reduction of long-term residents who are most likely to invest in their communities. In areas where residents feel less invested because of the continual threat of displacement, one can find depilated environmental conditions, such as broken windows on buildings, loitering and illegal disposing of hazardous substances. Furthermore, neighborhoods where residents have little incentive to invest are shown to have higher high school drop out rates, as well as crime rates.

[34] Putnam, Robert. Social Capital: Measurement and Consequences. ISUMA. 2001(Spring): 41-51.

Segregation The loss of affordable housing and displacement may also lead to residential segregation and 'ghettoization'. Displacement may contribute to residential segregation (by ethnicity, income, or class) if available housing for displaced residents is not available in integrated neighborhoods. A study that examined expiring HUD Section 8 agreements with private owners in California, found that, on average, families relocated to relatively more racially-segregated communities.[35]

Racially segregated neighborhoods tend to have less neighborhood amenities such as schools, libraries and public transportation due to economic, political and linguistic isolation, and racism. Research has documented the health impacts of residential segregation. Many studies have shown, for example a strong association between segregation and homicide rates. Besides an excess in mortality, studies have also demonstrated a relationship between residential segregation and negative health outcomes including teenage childbearing, tuberculosis, cardiovascular disease, availability of food establishments serving healthy fare and exposure to toxic air pollutants.[36]

Strong evidence for the effects of segregated environments comes from the HUD Moving to Opportunity demonstration program. This program, implemented in five US cities, evaluated the health and social effects of relocating households from public or subsidized housing in high poverty neighborhoods to private rental housing in non-poverty neighborhoods. The program design involved a random assignment of families to an experimental group (vouchers for housing in low poverty neighborhoods and relocation assistance) a section 8 group (geographically unrestricted vouchers), and a control group and longitudinal follow-up of families over 10 years. The executive summary of the interim evaluation (midpoint of follow up) testify to the social value of non-poverty area residence. [37]

> From the families' perspectives, the principal benefit of the move was a substantial improvement in housing and neighborhood conditions. Families who moved with program vouchers largely achieved the single objective that loomed largest for them at baseline: living in a home and neighborhood where they and their children could feel and be safe from crime and violence. On a list of observable characteristics, their homes and neighborhoods were substantially more desirable than those where control group members lived. These benefits accrued to families in both the experimental group and the Section 8 group, although the improvements tended to be roughly twice as large for experimental group families, who were required to move to low-poverty areas, at least initially.
>
> Perhaps not surprisingly, these improvements in living environment led to significant gains in

[35] Forbes E. Eroding Neighborhood Integration: The Impact of California's Expiring Section 8 Rent Subsidy Contracts on Low-Income Family Housing. 2000 The Ralph and Goldy Lewis Center for Regional Policy Studies. UCLA, School of Public Policy and Social Research. Los Angeles, California

[36] Acevedo-Garcia D, Lochner KA, Osypuk TL, Subramanian SV. Future Directions in Residential Segregation and Health Research: A Multilevel Approach. American Journal of Public Health. 2003; 93:215-221

[37] U.S. Department of Housing and Urban Development Moving to Opportunity for Fair Housing Demonstration Program: Interim Impacts Evaluation. 2003 (accessed at www.huduser.org)

mental health among adults in the experimental group. The levels of psychological distress and depression were substantially reduced in this group. In addition, adults in both the experimental and Section 8 groups experienced substantial reductions in obesity for reasons we do not yet understand. Among the children in these families, girls appear to have benefited from the move in several ways. They experienced improved psychological well-being, reporting lower rates of psychological distress, depression, and generalized anxiety disorder, and improved perceptions of their likelihood of going to college and getting a well paid, stable job as an adult. These girls' behaviors changed as well, with a smaller proportion working instead of attending school. They were less likely to engage in risky behavior or to use marijuana. Finally, both these girls and society as a whole benefited from a reduced number of arrests for violent crimes.

Increased Transportation System Demands Displaced residents may find that affordable and adequate replacement housing only exists far from their current neighborhoods, potentially, meaning that they will live far from jobs and schools. Relocation may thus create a new demand for public transportation services or alternatively new demands for automobile purchase and use. Studies on the effects of urban sprawl have found that low income families, children and the elderly are disproportionately affected by the longer distances needed to travel as a result of relocation to the outskirts of a city or a region. The working poor rely on both urban public transit systems to hold steady jobs and access health care, child care and other critical social services. Former welfare recipients are particularly dependent upon the provision of reliable and convenient transportation services.

Increased Demands for Social Services For a project that results in significant displacement or relocation to non comparable housing, the magnitude of human health and social impacts may be severe. This may result in the need to fund and develop new social services to address the human impacts. For example, displacement may potentially result in new demand for safety net services for health and welfare, for mental health services, and for special educational services for children. In San Francisco, services for homeless adults and children cost the City millions of dollars and over the past several years demand for services has greatly exceeded capacity. The demand for such services is indirectly related to the magnitude of the adverse displacement outcomes.

Displacement in California and San Francisco

During the period from March 2002 through February 2003, a total of 1,643 various eviction notices were filed with the department. This figure includes 93 notices given due to failure to pay rent, which are not required to be filed with the department. The number of notices filed with the department for this period represents a 22% decrease over the prior year's filings (2,101).

The largest declines were in owner occupancy evictions, 516, or a 29% decrease, nuisance declined by 10% to 251 and eviction notices for breach declined by nearly 40% to 231. The only increases were in temporary capital improvement evictions which increased from 44

to 68, or a 26% increase and Ellis Act evictions, from 148 buildings to 187 for a 26% increase for the period. In San Francisco, the Ellis Act, a state law which says that landlords have the unconditional right to "go out of business" is used by property owners to 'change the use' of the building (condominium conversions) resulting in evictions.

Reasons for Just-Cause Evictions 2001/02 and 2002/03[38]

Just Cause	2001/02	2002/03
Owner-Occupied	726	516
Demolish/remove unit	113	67
Capital improvement (temporary)	44	68
Ellis eviction	148	187

While the issues of affordable housing, displacement, and gentrification are high on the public agenda, limited recent research has tracked the direct consequences of displacement on people. A 1999-2000 analysis of Ellis evictions in San Francisco conducted by the San Francisco Tenants' Union reveals that:

- Seniors, people with disabilities and children are most likely to become victims of the Ellis Act, comprising 51% of all Ellis Act evictions since 1999.

- Those most apt to be evicted are renters with long-term tenancies and affordable rents. Those evicted under Ellis had an average tenancy of over 11 years and were paying an average rent of $1,024 for a 2 bedroom apartment.

- Further, the Ellis Act is resulting in the loss of thousands of affordable units. For every new affordable unit that is built, 5 affordable units are lost.

Accounts from local housing advocacy organizations reveal some consequences of forced eviction among low-income families and the elderly. St. Peter's Housing, a Mission district-based non-profit organization serving low income families around housing issues and landlord/tenant problems, for example, report that a significant proportion of the families they serve are forced to separate to obtain temporary shelter, while other families resort to overcrowding in illegal units and yet other families are forced to leave their neighborhoods and the City in order to secure an affordable place to live.

St. Peter estimates that at least 20% of their clients have one or more family member aged 60 years or older. According to St. Peter's Housing, elderly residents and families are more frequently displaced, experience particularly high levels discrimination in securing housing, and are most vulnerable for separation as a result of eviction. The following case history illustrates the complexity of housing issues confronted by families with elderly members:

> An elderly couple was forced to separate (from their daughter and grandchildren) and to resort to live in an illegal in-law unit. The unit was so poorly maintained that the stairs leading to the entrance of the unit collapsed resulting in the broken hip of the elderly woman. The elderly woman reported the incidence to St. Peter's for advice. St. Peter reported this case the

[38] Rent Stabilization and Arbitration Board, April 28, 2003

> Department of Building Inspections (DBI) whose inspector cited the owner for the illegal unit, and forced the owner to shut down the illegal unit. DBI's inspection is in itself intended to protect families from living in substandard conditions and yet, in this particularly case, served to aggravate the elderly couple living situation. The elderly couple was not only forced to separate from their family, but were now suffering from the injured hip and its incurred health care cost, and as a result of the inspection was now faced with displacement. [Personal communication, St. Peter's Housing, December 2003]

The effects of displacement as a result of the lack of affordable housing among the senior population are heightened among its Gay and Lesbian subgroups. Recent, cross-sectional evidence of GLBT elderly living in the greater Los Angeles Area shows that:

- Same-sex partners cannot share a room in most care facilities, forcing many GLBT older adults retreat back into the closet, in order to secure housing at nursing homes.
- Same-sex partners cannot receive Social Security survivor benefits.
- GLBT older adults do not have the same family support systems as their heterosexual counterparts.
- There are many government programs that target the elderly, but none are geared towards GLBT older adults.[39]

[39] Gay and Lesbian Elder Housing of Los Angeles Website: http://www.glehc.org/facts.htm, accessed on December 3, 2003

SECTION II SOCIAL, HEALTH, AND ENVIRONMENTAL JUSTICE IMPACTS IN CEQA POLICY

As discussed in the section above, the lack of housing affordability in California and its human impacts suggests that environmental impact assessment (EIA) should consider how a development project might impact housing affordability or displaced residents. Four ways in which these issues fit into the framework of the California Environmental Quality Act (CEQA) include:

- As potential indirect social and economic impacts on population and housing;
- As indirect health impacts of physical or social impacts;
- As environmental justice impacts;
- As impacts requiring evaluation for consistency with city, regional and state housing and environmental policy goals.

Adverse Social and Economic Effects of Impacts on Population and Housing

CEQA considers the loss of housing requiring construction of new housing and the displacement of people as potential adverse environmental impacts requiring analysis in the environmental checklist provided in CEQA Guidelines. The checklists screening questions include:

- Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?
- Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?
- Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

However, impacts on population and housing may have particular adverse effects on parts of the population. For example, if a project replaces low income housing with market rate housing, this may disproportionately and adversely impact those with lower income. This type of impact may be considered an adverse social impact. Under CEQA, adverse social and economic impacts may be analyzed in determining the significance of physical environmental changes. Title 14, section 15064, subsection (e) of the California Administrative Code provides the following guidance:

> Economic and social changes resulting from a project shall not be treated as significant effects on the environment. *Economic or social changes may be used, however, to determine that a physical change shall be regarded as a significant effect on the environment.* Where a physical change is caused by economic or social effects of a project, the physical change may be regarded as a significant effect in the same manner as any other physical change resulting from the project. Alternatively, economic and social effects of a physical change may be used to determine that the physical change is a significant effect on the environment. *If the physical change causes adverse economic or social effects on people, those adverse effects may be used as a factor in determining whether the physical change is significant.* [Emphasis added]

For example, if a project would cause overcrowding of a public facility and the overcrowding causes an

adverse effect on people, the overcrowding would be regarded as a significant effect.

Despite the guidance above, the inclusion of social and economic impacts under CEQA is controversial. Many interpret the language in section 15064, subsection (e) to mean that the analysis of indirect adverse social and economic effects may be considered in an EIR but are not, strictly speaking, required.[40] According to the California Department of Transportation: "Many people in California, including some decision-makers, harbor the general belief that CEQA addresses only purely "environmental" issues, not social, demographic, or economic issues often raised by proposed projects. This is erroneous. The assumption however is understandable due to the complex linkage that must be demonstrated between the physical, social, and economic environment, and the determination of 'Significance'."[41]

Some case law has directly addressed this issue. In Citizen's Association for Sensible Development of Bishop Area v. County of Inyo,[42] the courts reconciled the ambiguity of section 15064, subsection (e) with subsections (d) and (f) which discussed evaluation of secondary or indirect consequences of a project. In the Bishop case, the Court ruled that subsection (f) gave the lead agency discretion to determine whether the consequences of social and economic changes were significant but did not give it discretion not to consider these consequences at all. In their ruling, the Court interpreted section 15064 as follows: "the lead agency shall consider the secondary or indirect environmental consequences of economic and social changes, but may find them to be insignificant."

Indirect Health Impacts

Environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly are considered mandatory findings of significance in accordance with CEQA Guidelines Section 15065.

A lead agency shall find that a project may have a significant effect on the environment and thereby require an EIR to be prepared for the project where any of the following conditions occur: (d) The environmental effects of a project will cause substantial adverse effects on human beings, either directly or indirectly.

As discussed in the evidence provided above, housing affordability and displacement affect health in numerous ways. Projects that have area or regional affects on the availability of affordable housing may be considered to have potential indirect adverse health consequences. Since displaced residents may not be relocated in adequate housing, the potential indirect health impacts of displacement also warrant consideration.

Environmental Justice Impacts

Environmental justice is rooted in the Equal Protection Clause of the U.S. Constitution and can be advanced using National Environmental

[40] Bass, RE., Herson, AI, Bogdan, KM. CEQA Deskbook A step-by-step guide on how to comply with the California Environmental Quality Act. Solano Press. Point Arena, 2001.
[41] Guidelines for Community Impact Assessment. California Department of Transportation. 1997
[42] Citizen's Association for Sensible Development v. County of Inyo, 172Cal.App.3d 151 (1985)

Policy Act (NEPA) as well as the Civil Rights Act of 1964. Environmental Justice provides another rationale for considering the effects on affordable housing or the displacement of low income residents under CEQA. California Law defines Environmental Justice as "... the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies."[43]

While environmental justice analysis and efforts in California have historically emphasized disproportionate health effects of toxic physical environmental agents, the concept of environmental justice is broader than the physical environment and human health. As stated in the 1997 President's Council of Economic Quality (CEQ) guidance adverse environmental justice effects can be also economic, social, cultural, and ecological impacts directly or indirectly related to physical environmental changes or impacts. 1997 CEQ Guidance states:

> When determining whether environmental effects are disproportionately high and adverse, agencies are to consider the following three factors to the extent practicable:
> (a) Whether there is or will be an impact on the natural or physical environment that significantly (as employed by NEPA) and adversely affects a minority population, low-income population, or Indian tribe. Such effects may include ecological, cultural, human health, economic, or social impacts on minority communities, low-income communities, or Indian tribes when those impacts are interrelated to impacts on the natural or physical environment; and
> (b) Whether environmental effects are significant (as employed by NEPA) and/or may be having an adverse impact on minority populations, low-income populations, or Indian tribes that appreciably exceeds or is likely to appreciably exceed those on the general population or other appropriate comparison group; and
> (c) Whether the environmental effects occur or would occur in a minority population, low-income population, or Indian tribe affected by cumulative or multiple adverse exposures from environmental hazards.

In California, Assembly Bill 1553 requires that the principles of environmental justice be incorporated into state guidelines for local general plans. As discussed below, this broader definition of environmental justice effects is consistent with adverse environmental effects under NEPA and CEQA as well as the 2003 State of California General Plan Guidelines Section on Environmental Justice and Sustainability and the 2003 Governor's Environmental Goals and Policy Report. The 2003 General Plan Guidelines include mixed-income housing development as a component of sustainability and environmental justice. Even from the standpoint of public health, inequitable social and economic effects can be equally if not more important that inequitable environment quality effects. An environmental justice analysis of projects that result in population or housing loss could focus on the potential for disproportionate impacts to low income and minority populations both living in the current units as well as effects on the market for affordable housing in the region.

[43] California Government Code Section 65040.12

Consistency with Local, Regional and State Land Use Policy

CEQA guidelines consider potential significant environmental impacts to include: "Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?" Local policies related to affordable housing can be found in the Housing Element of the General Plan, the HUD Consolidated Plan, and local ordinances related to rent and to eviction prevention.

California State law defines also a jurisdictions fair share housing goals in terms of four categories of affordability through the Regional Housing Needs Determination (RHND) process, devised to address the need for and planning of housing across a range of affordability and in all communities throughout California. Each jurisdiction within the Bay Area (101 cities, 9 counties) is given a share of the anticipated regional housing need. The Bay Area's regional housing need is specified by the California State Department of Housing and Community Development (HCD) and finalized through negotiations with Association of Bay Area Governments. The timeframe for this RHND process is January 1, 1999, through June 30, 2006, (a seven and a half year planning period). The current RHND requires 5244 units affordable to very low income residents, 2136 units affordable to low income residents, 5639 units affordable to moderate income residents, and 7363 units affordable to above moderate income residents. While San Francisco has met its market rate housing targets in recent years, it has not met moderate income, low income and very low income housing needs.

Total Need	Very Low	Low	Moderate	Above Moderate
20,372	5,244	2,126	5,639	7,363

The 2003 State of California General Plan Guidelines may also be viewed as applicable impacts on affordable housing.[44] The guideline's section on sustainability and environmental justice emphasize the need to carefully match employment potential, housing demand by income level and type, and new housing production.

The importance of ensuring adequate and affordable housing for every sector of the population to long term environmental quality and ecological sustainability is also emphasized in the 2003 Governor's Environmental Goals and Policy Report.[45] These State policies together with the emphasis on long term environmental goals in CEQA guidelines Section 15065 (b) suggests that impacts on housing affordability and adequacy are also potential mandatory findings of significance.

[44] 2003 State of California General Plan Guidelines. Office of Planning and Research. 2003

[45] Governor's Environmental Goals and Policy Report. Office of Planning and Research. 2003 (Accessed at: http://www.opr.ca.gov/EnvGoals/PDFs/EGPR--11-10-03.pdf)

SECTION III IMPACT ASSESSMENT METHODS AND GUIDELINES FOR AFFORDABLE HOUSING AND DISPLACEMENT

A number of federal, state and local agencies consider displacement of low-income populations and loss affordable housing as potentially adverse impacts in the context of Environmental Impact Assessment. Examples of methods and guidelines are provided below:

Social Impact Assessment (SIA) The practice of SIA dates back to the construction of the trans-Alaska pipeline. At the time, critics argued that the Environmental Impact Statement (EIS) produced for that project failed to address potential social effects such as the influx of tens of thousands of non-native construction workers on the culture of the Inuit. In 1994, the U.S. Federal Government published a set of guidelines for SIA to support social assessment under NEPA.[46] Social impacts are defined as "…the consequences to human populations of any public or private actions-that alter the ways in which people live, work, play, relate to one another, organize to meet their needs and generally cope as members of society. The term also includes cultural impacts involving changes to the norms, values, and beliefs that guide and rationalize their cognition of themselves and their society." The guidelines categorized social impact variables as follows:

1. Population Characteristics mean present population and expected change, ethnic and racial diversity, and influxes and outflows of temporary residents as well as the arrival of seasonal or leisure residents.

2. Community and Institutional Structures mean the size, structure, and level of organization of local government including linkages to the larger political systems. They also include historical and present patterns of employment and industrial diversification, the size and level of activity of voluntary associations, religious organizations and interests groups, and finally, how these institutions relate to each other.

3. Political and Social Resources refer to the distribution of power authority, the interested and affected publics, and the leadership capability and capacity within the community or region.

4. Individual and Family Changes refer to factors which influence the daily life of the individuals and families, including attitudes, perceptions, family characteristics and friendship networks. These changes range from attitudes toward the policy to an alteration in family and friendship networks to perceptions of risk, health, and safety.

5. Community Resources: Resources include patterns of natural resource and land use; the availability of housing and community services to include health, police and fire protection and sanitation facilities. A key to the continuity and survival of human communities are their historical and cultural resources. Under this collection of variables we also consider possible

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46 http://www.nmfs.noaa.gov/sfa/social_impact_guide.htm

changes for indigenous people and religious sub-cultures.

U.S. Department of Transportation Community Impact Assessment Guidance Among transportation agencies, changes in policies have included redefining the definition of "environment" to include "the natural environment, the built environment, the cultural and social fabric of our country and our neighborhoods, and the quality of life of the people who live here,' and considering project mediated effects on community cohesion; public facilities; employment; tax and property values; displacement of people, businesses, and farms; and adverse impacts on community and regional growth.

DOT guidelines for community impact assessment consider a number of social and economic factors.[47] They further recognize that while community impact assessment should not be exhaustive, it should focus on community goals and issues of community concern and controversy. The guidelines identify that displacement can involve, neighborhoods, businesses, and people. (www.ciatrans.net) Recommended analysis of impacts on residential displacement include the number and type (multi-family, single family) of residences displaced and the particular needs of vulnerable groups (disabled, minority, elderly).

Council on Environmental Quality Environmental Justice Guidance The Council on Environmental Quality, the federal agency tasked with oversight of NEPA and government compliance with Executive Order 12898 developed guidance to assist federal agencies with addressing environmental justice concerns in the context of NEPA procedures. This guidance suggests that agencies should 'determine whether minority populations, low-income populations, or Indian tribes are present in the affected area…consider data concerning the potential for multiple or cumulative exposure to human health or environmental hazards…recognize the interrelated cultural, social, occupational, historical, or economic factors that may multiply the natural and physical environmental effects…[and]…should assure meaningful community representation in the process.[48]

California Department of Transportation The California Department of Transportation (CalTrans) reference documents for CEQA provide specific guidance for the evaluation of impacts on population and on housing displacement. The 1997 Guidelines for Community Impact Assessment point out that the disproportionate displacement of vulnerable populations can have significant adverse human impacts:

> Certain population groups such as senior citizens, low income residents and non English speaking people often have strong community ties and depend on primary social relationships and important support networks that can be severed upon relocation. Households with school aged children may consider relocation especially disruptive if school transfers would be involved. Disabled people and those

[47] Federal Highway Administration Community Impact Assessment Website (Accessed at: www.ciatrans.net)

[48] Environmental Justice: Guidance under the National Environmental Policy Act. Council on Environmental Quality. 1997.

without automobile transportation often have special relocation problems.

The guidelines suggest investigating the demographics of the residents to determine if any vulnerable groups (Low income, minority, seniors, disabled, and children) would be impacted. The guidelines suggest evaluating the effects on the stock of affordable housing:

> A loss of a substantial number of houses affordable to people with low and moderate incomes may have an effect on the community stock of affordable housing. This could have the effect of increasing the demand for housing in a given sector of the market, bidding up the cost of that housing if the market supply is constrained and thereby disproportionately affecting certain income groups.

Similarly, the 2003 Desk Guide for Environmental Justice in Transportation Planning and Investments. The environmental justice guidelines categorize social and economic impacts into land use and development, population and housing, and fiscal and economic. These guidelines suggest analysis of population and housing impacts consider a number of variables. These include:

- Property acquisition and displacement
- Access to neighborhoods
- Community Cohesion
- Safety and security
- Visual and aesthetic quality
- Property values and gentrification

A particular concern emphasized by CalTrans is impacts of displacement and relocation on neighborhood or community cohesion. The decision tree for residential displacement includes assessment of the availability of relocation housing in the community where displacement is occurring. Social impacts considerations identified by CalTrans related to cohesion include:

- Is there evidence that community cohesion exists?
- Will the proposed project affect interaction among persons and groups?
- Will the proposed project cause redistribution of the population or an influx or loss of populations?
- Will certain people be separated or set apart from others?

City of Los Angeles Thresholds Guide In its *1998 CEQA Thresholds Guide*, the City of Los Angeles uses the following screening criteria for evaluating significant effects on population and housing displacement.[49]

- *Would the project result in the net loss of any existing housing units affordable to very low income or low income households (as defined by federal and/or City standards), through demolition, conversion, or other means.*

The Los Angeles guidelines evaluate the significance of population and housing impacts by considering the following factors:

- The net change in market rate and affordable units in the project area
- The current and anticipated supply of market rate and affordable units in the project area

[49] http://www.ci.la.ca.us/EAD/EADWeb-AQD/Thresholds_PDF/introceq.pdf

- The demographics of the project area
- The consistency with city and regional housing policies

The guidelines also suggest the following two mitigation measure for displacement of affordable housing:

- Exceed the statutory requirements for relocation assistance
- Increase the number of housing units affordable to lower income households

Tahoe Regional Planning Agency (TRPA) The TRPA Initial Environmental Checklist[50] requires a response to and evidence for the following questions relevant to the displacement of low income residents and the loss of affordable housing:

- Will the proposal include or result in the temporary or permanent displacement of residents?
- Will the proposal decrease the amount of housing in the Tahoe Region historically or currently being rented at rates affordable by lower and very-low-income households?
- Will the proposal result in the loss of housing for lower-income and very-low-income households?

Mitigation of affordable housing loss is required for project approval. According to planners at the TRPA any loss of affordable housing due to redevelopment has to be either rebuilt on site or offsite taking into account similar accessibility to transport resources. A recent example of such mitigation occurred with the proposed development of the 138 unit Round Hill Vacation Resort. The development of the time share condominium involved the removal of the 186 unit Lake Park Apartments. To mitigate displacement, the project included the construction of 67 new apartment units offsite prioritized for displaced tenants, affordable housing restrictions for the new apartments, phased demolition over 24 months with eviction of no more than 8 units per month, and relocation assistance.[51]

County of Santa Barbara Santa Barbara's 1993 Environmental Thresholds and Guideline Manual[52] provide a specific threshold for the loss of affordable housing. The rationale for establishing such a threshold comes from the county's affordable housing policies. The Santa Barbara County Housing Element documents a substantial shortfall in affordable housing opportunities and the preservation of the existing affordable housing stock is a stated goal of the Housing Element. According to the Element, "the loss or demolition of existing affordable units can displace very low to moderate income persons and further restricts the housing market." The threshold for Very Low to Moderate Income Housing Units is as follows:

- *The loss of four or more very low to moderate income housing opportunities through demolition, conversion, or other means represents a significant housing impact. Affordability is determined on the basis of the applicable definitions within the County's Comprehensive Plan and Coastal Plan.*

[50] http://www.trpa.org/Applications/new_applications2003/IECFINAL%20APRIL%202002%20Comp.pdf

[51] Lyn Barnett, Tahoe Regional Planning Association,. Personal Communication. and Balloffet and Associates. Round Hill Vacation Resort / Lake vista Apartments Environmental Assessment.

[52] http://ceres.ca.gov/planning/cega/thresholds.html

Mitigations to assist persons residing in those units shall be applied.

Santa Barbara's CEQA guidance also provides the following mitigation measures:

- *Mitigations would include extended length of notice to quit premises, relocation expenses, demolished or converted units through physical on or off-site replacement or by the payment of fees. Onsite replacement of low or moderate income housing is the preferable alternative. If onsite replacement is infeasible, the units shall be replaced offsite. Payment of an in-lieu fee shall occur only if on and off-site replacement are proven to be infeasible. Housing mitigation fees shall be sufficient to provide replacement of the demolished or converted units.*

Appendix I Model Housing Impacts Analysis

Screening Criteria

- Will the project result a decrease in the supply of housing?
- Will the project result in an increase in the demand for housing?
- Will the proposal result in the loss of housing affordability, availability or quality for low income or otherwise sensitive populations?
- Will low income or otherwise sensitive be displaced or relocated?

Setting Variables

- The demographics of the project area and locality
- The current and anticipated supply of housing units in the project area and locality disaggregated by affordability;
- Availability of vacant units in the project area and locality disaggregated by level of affordability;
- The quality (safety, environmental conditions…) of available housing units in the project area and locality (sources: census, local housing complaint data)
- Evidence of social cohesion in project area(e.g. organization, interactions, relationships, and support among residents)
- Access to public services in the project area (transportation, schools, childcare…)
- The number and type of employment opportunities in proximity to the project area

Analysis Variables

- The net change in market rate units historically or currently being rented at rates affordable by lower and very-low-income households in the project area
- The net change in affordable (including section 8, permanently affordable, and rent-controlled) units historically or currently being rented at rates affordable by lower and very-low-income households in the project area
- Existence within the displaced population of a higher than average proportion of ethnic minority, low income, medically vulnerable or health sensitive populations among displaced residents
- The location and comparability of replacement housing for displaced households;
- Effects on support (food, advice, childcare, elder care) provided to and by displaced residents
- Increased dependence on public assistance or public services
- Changes in accessibility to or utilization of public services
- Changes in the number of family or relatives living in close proximity
- Effects on crowding: changes in the number of individuals per room in the project area
- Changes in accessibility to public transportation
- Changes in the need for automobile ownership or use

Significance Criteria

- Net loss of housing supply relative to demand in the area, locality, or region;
- Net loss of affordable housing in the project area or locality;
- Significant reduction in housing quality or safety;
- Significant number of residents relocated to non-comparable housing;
- Any residents made temporarily or permanently homeless;
- Loss of community cohesion in project area;
- Increase of local residential segregation.

Mitigation Measures

- Change land use / zoning controls to enable increased housing density;
- Develop relocation plan consistent with California State Relocation Assistance and Property Acquisition Guidelines;
- Construct of replacement affordable housing onsite or offsite;
- Housing impact fees.

EXHIBIT 11

Terrell Watt Planning Consultants
1937 Filbert Street
San Francisco, CA 94123
terryjwatt@gmail.com
415-377-6280

September 9, 2020

Richard Drury
Lozeau Drury, LLP
410 12th Street, Suite 250
Oakland, CA 94607

RE: Comments on Draft Environmental Impact Report for Proposed UCSF Comprehensive Parnassus Heights Plan

Dear Mr. Drury,

At your request, I have reviewed the Draft Environmental Impact Report ("DEIR") for the proposed UCSF Comprehensive Parnassus Heights Plan ("Project").[1] My review focused on the DEIR's treatment of:

- Population and Housing
- Growth Inducement
- Land Use and Planning
- Alternatives

In preparing these comments, I have reviewed the following information:

1. Draft Environmental Impact Report for the Plan and Appendices
2. 2014 LARDP
3. CPHP
4. 1976 Regents' Resolution
5. January 16, 2020 Letter from Mayor London Breed to Chancellor Sam Hawgood citing the 2007 MOU and 1987 and 2007 MOU's

After carefully reviewing the DEIR for the Project I have concluded the DEIR fails in numerous respects to comply with CEQA and to fulfill CEQA's fundamental mandate. As described below, the DEIR violates this law because it fails to analyze adequately the significant environmental impacts of the Project or propose sufficient mitigation measures. Where, as here, the EIR fails

[1] See Attachment 1 for Watt Qualifications

to fully and accurately inform decision-makers and the public of the environmental consequences of proposed actions, it does not satisfy the basic goals of the statute. Because of the DEIR's numerous and serious inadequacies, the Lead Agency must revise and recirculate the document to permit an adequate understanding of the environmental issues and potential solutions, including feasible mitigation measures and alternatives.

I. Context and Introduction

A. UCSF Should Honor the Space Ceiling and Other Commitments

UCSF should honor its commitment to the space ceiling and to development compatible with surrounding uses at the Parnassus Heights campus by selecting an alternative within the existing space ceiling. The Parnassus Heights campus site, the oldest and largest of the UCSF campuses, is located in among some of the oldest neighborhoods in San Francisco, which are characterized by a mix of unique residential areas ranging from single family to multi-family housing and neighborhood serving commercial districts such as located along Irving and Judah Streets and 9th Avenue. In addition to Mount Sutro Open Space Reserve, several park and open space areas are located near the campus. This area surrounding the Parnassus Heights campus is further characterized by local serving streets plagued with traffic, parking congestion and lack of transit. Approximately 43% of the main campus (exclusive of the Aldea area) borders the Reserve, breaking the City's normal grid pattern and limiting ingress and egress routes to the main campus. The surrounding neighborhoods, like all of San Francisco, also suffer from a lack of affordable housing and available sites to build new housing. Recognizing the unique and constrained location the Parnassus Heights campus occupies, the Regents adopted a sensible "space ceiling" for the campus in its 1976 Regents Resolution, stating in pertinent part:

> "The total structures within the campus boundaries shall not exceed 3.55 million gross square feet (not including space committed to residential use on Third, Fourth, Fifth and Parnassus Avenues and Kirkham and Irving Streets) and this limit shall be permanent." See Attachment 2.

The Regent's Resolution recognized the transportation problems in the area and committed funds to develop a plan to alleviate transportation problems including traffic, parking congestion and lack of transit. Concern for the impacts of the Project on the neighborhood is an ongoing concern. In a letter to Chancellor Hawgood, dated January 16, 2020, Mayor London Breed, President of the Board of Supervisors Norman Yee and Supervisor Dean Preston note the need for a revised MOU to adopt and formalize arrangements for coordination and consideration of both our interests and inputs in the context of land use approvals, transportation needs and ongoing service provisions, noting the common challenges faced include housing supply, affordability and climate and seismic related risks. See Attachment 3. According to a June 4th Staff Report to the Planning Commission, the Planning Department and UCSF are engaged in ongoing conversations about how to structure a stakeholder process to achieve the Mayor and Supervisor's objectives, expected to culminate in an MOU.

While not part of the objectives or regulations in the UCSF 2014 LRDP, reference is made in the DEIR to the Community Planning Principles including:

- Land Use LU1. Plan for growth and renovations that are substantially consistent with use limitations and height and bulk limitations in the City planning and zoning codes that exist at the time UCSF initiates the site selection process for such growth and renovation projects. The University should consider City planning proposals that are underway. UCSF will endeavor to be consistent with applicable land use plans and mitigation approaches where consistent with UC policy, while respecting specific neighborhood plans and concerns.
- LU3. Ensure that future UCSF development is compatible with physical surroundings in use, scale, and density, and that do not negatively affect surrounding land uses.
- LU10. Work toward compliance with the Parnassus Heights space ceiling and adhere to boundaries for the Parnassus Heights Campus site.

DEIR at page 4.10-3 to 4.10-4.

Although the University is constitutionally exempt from local land use regulation whenever using properties under its control in furtherance of its "educational mission," the University has committed to substantial consistency with local policies where feasible. This dual commitment – to the space ceiling and to adherence where feasible to local policy – is one UCSF should and can honor given the very real constraints to development in the area surrounding the Parnassus Heights campus. There are feasible alternatives to the Project, including a new hospital at Mount Zion, Mission Bay or Hunters Point, that should be fully considered in a revised and recirculated DEIR before the decision is made to break the space ceiling commitment and significantly impacting the surrounding neighborhoods.

B. The DEIR Should be Revised and Recirculated to Address the Outbreak in December 2019 of COVID 19

The outbreak of COVID 19 was first reported on December 31, 2019 in Wuhan China. The Notice of Preparation (NOP) for the UCSF Parnassus Heights campus was issued January 14, 2020. As described at page 4.0-6 of the DEIR, "[n]ormally, the baseline condition is the physical condition that exists when the Notice of Preparation ("NOP") is published. The NOP for the proposed CPHP was published in January 2020, and the baseline conditions contained in this CPHP EIR are generally taken from this time period. However, the CEQA Guidelines and applicable case law recognize that the date for establishing an environmental baseline cannot always be rigid." DEIR at 4.6-6. UCSF is a health based organization, therefore fully aware early on of the implications of the Wuhan outbreak. The DEIR itself acknowledged the potential implications of COVID 19, concluding that:

> "The net effect of the pandemic on the Parnassus Heights campus site development and operations cannot be predicted at this point in time without speculation." DEIR at page 1-9.

The DEIR concedes COVID 19 has implications for the Project. For example, the objectives for the New Hospital, objectives used in part to dismiss some alternatives, include an increase in beds to provide for inpatient health care in times of severe strain such as the current pandemic. DEIR at page 6-4. The brief discussion at page 1-9 also acknowledges that UCSF will likely consider operational changes such as increases in telehealth services and telework, among others.

COVID 19 was known or should have been known at the time of the issuance of the NOP and certainly, as reflected in Section 1.7 of the DEIR, was known prior to circulation of the DEIR for public comment. COVID 19 warrants changes and updates to existing environmental setting information, critical to complete an accurate impact analysis, as well as to the Project Description (e.g., space needs changes given a likely transition as noted in the discussion to telework and telehealth). Significant questions are raised by COVID 19 that have implications to the Project and related impacts – including but not limited to an acknowledgement that UCSF is likely to increase telework, telehealth consultations and remote learning. These are but a few of the changes warranting UCSF to hit pause both to revise the DEIR and to re-engage the public and experts, right-size the Project and evaluate other alternatives that would reduce or eliminate impacts while adhering to the existing space ceiling.

II. The Project Violates the California Environmental Quality Act

A. The Project Description is In Flux

A fundamental requirement of CEQA is that an EIR contain an accurate, complete and stable project description. Without a complete and stable project description, an agency and the public cannot be assured that all the project's environmental impacts have been revealed and mitigated. Further, CEQA and the CEQA Guidelines mandate that an EIR include a description of the "physical environmental conditions . . . from both a local and a regional perspective. . . Knowledge of the regional setting is critical to the assessment of environmental impacts." CEQA Guidelines Section 15125(a) and (c). This requirement derives from the principle that without an adequate description of the project's local and regional context, the EIR – and thus the decision-makers, agencies and public who rely on the EIR – cannot accurately assess the potentially significant impacts of the proposed Project.

As discussed above, the Project is likely changing in fundamental ways due to COVID 19 – including adjustments to the Project due to a likely increase in telework and telehealth, among other adjustments:

> "UCSF will likely consider operational changes such as increases in telework and telehealth services, especially primary and secondary health care services." DEIR at 1-9.

In addition to telehealth and telework, distance learning also appears likely on the increase. The overall space needs and allocations for the Project should be revisited in light of COVID 19 and other rapidly changing conditions due to COVID. The emerging stakeholder process referenced in the June 2020 Staff Memo to the San Francisco Planning Commission provides another good reason to pause the proposed Project entitlement process and discuss an appropriately scaled Project for the Parnassus campus site.

B. The DEIR Includes Incomplete and Inadequate Baseline Information to Support the Analysis of Project Impacts

The DEIR fails to adequately describe baseline (environmental setting) conditions. Setting or environmental baseline information is as essential to adequately disclosing and analyzing project-related and cumulative impacts as a complete and consistent Project description. Without adequate and complete information about the environmental setting, it is not possible to determine whether the Project improves or makes worse existing environmental conditions or the extent of the Project-related and cumulative impacts. The Project NOP was issued January 14, 2020 after the COVID 19 pandemic was a known crisis. As such, the DEIR's baseline or existing environmental setting information must be updated to reflect conditions Pre-COVID 19 and Post emergence of COVID 19. Another option is to postpone the Project until more is known about the COVID crisis. Both pre- and post- emergence of COVID 19 information is critical if adequate analyses are to be completed for topics ranging from land use, housing and population to transportation.

Examples of baseline setting information that is missing from the DEIR includes but is not limited to the following.

1. Students, Faculty and Staff

The DEIR omits information essential to analysis of whether the Project will result in significant impacts to housing supply as well as related impacts of displacement due to increased demand for housing and gentrification. Such information includes at a minimum the general salary ranges of new students, faculty and staff. Such information was provided in the Mission Bay Hospital environmental documents and fiscal impact analysis, hereby incorporated by reference. . In addition, the DEIR should provide information about the current student, staff and faculty to inform analysis of new housing demand (e.g., where do current staff, faculty and students live? Etc.).

2. Demographics in the Surrounding Neighborhood and City

Basic demographic information must be part of the DEIR's revised baseline in order to support and inform analysis of Project impacts on housing. The DEIR includes no information about the surrounding area demographics or demographics in the City and study area, making adequate analysis of impacts impossible.

3. Affordable, Student, Workforce and Family Friendly Housing

The Project will significantly increase students, staff and faculty at the campus adding to the demand for scarce housing affordable to new students, staff and faculty in the areas surrounding the Project, the City and the region. In addition the Project will nearly double projected new job growth due to the multiplier effect. The DEIR must analyze the potential for the Project to raise housing prices, contribute to gentrification and displacement due to price increases and competition for scarce housing in the surrounding area, San Francisco and the region. Very little setting information is provided to support analysis in the short, 13 page section on Population and Housing and the even shorter, 8-page discussion of growth inducement.

To perform an adequate analysis of Project and cumulative impacts to population and housing and growth inducement, it is essential the DEIR include in the description of the Project baseline (setting) details concerning existing vacancy rates for affordable units, including deed restricted housing, family housing, and housing affordable to the workforce[2] in the surrounding neighborhoods[3], the City as well as the broader five-county study area. Little setting information is provided in support of the DEIR's across the board conclusions that impacts associated with project growth will be less than significant. The DEIR contains no information concerning affordable housing and workforce housing whatsoever.

Without current and complete information about the existing housing stock in the surrounding neighborhoods, the City and the study area, the DEIR cannot adequately analyze the Project's impact on affordable, workforce and family friendly housing and households, and the DEIR's conclusions concerning the insignificance of Project-related and cumulative impacts cannot be supported by facts and evidence. The DEIR must be revised to include this and other baseline information, including changes in housing stock and availability pre- and post- emergence of COVID 19. While long term effects of COVID 19 maybe speculative, some effects are known and should be disclosed where possible.

In addition to the above information, the DEIR must discuss and include in its revised analysis, the locations of disadvantaged communities. Such information is essential to support analysis of the extent to which the Project could further impact these DACs and exacerbate existing housing inequity. Sources of this information are readily available. See e.g., Urban Displacement Project www.urbandisplacement.org/map/sf. Project such as this one have a high potential to contribute to the gentrification and displacement of disadvantaged communities

[2] Workforce housing is housing at the lower end of market rate serving households with up to 200% of median income and often referred to as the "missing middle" or gap in affordable housing in San Francisco. Voters recently approved funding to build more housing, including for the SF workforce.

[3] Increasingly with the COVID 19 threat, workers and students choosing to avoid transit are increasingly putting pressure on nearby housing. This warrants adjustment of the DEIR's analysis of housing impacts in the surrounding neighborhoods.

due to the influx of additional students, staff and faculty who most likely will be seeking housing within walking and biking distance to the campus in a post COVID world.

4. Existing Jobs-Housing Balance and Fit within the Surrounding Neighborhood, City and Regional Study Area

The DEIR must analyze the potential for the Project to make worse the existing imbalance of jobs and housing. Little information is provided in the DEIR on jobs housing imbalance pre- or post-emergence of COVID 19. The DEIR fails to cite readily available information for San Francisco and Region concerning the growing imbalance. Specifically, San Francisco or more accurately in the SF-Oakland-Hayward census area, created only one new home per 6.8 new jobs between 2010 and 2015. Source: US Census Data. Looking just at San Francisco, it comes out to 8.2 jobs per new home during that same period, further increasing an enormous gap in the already out of balance housing to jobs ratio in the Bay Area. Not surprising rents increased by 43% over the same period due to housing scarcity and competition from new employees. Source: U.S. Census Data 2010 and 2015. This data is readily available and must be included in a revised DEIR to support a credible analysis of the Project's impacts on housing and growth.

C. Finding the right jobs-housing balance has long been an important concern for urban planners and an important policy consideration for general and area plans. More recently, attention has turned to jobs-housing fit – the extent to which housing price and rent is well matched to local job salary and quality. The DEIR are silent on the matter of jobs housing fit and fails to adequately address the issue of jobs housing balance. The DEIR should be revised to describe the existing job-housing balance and fit for the surrounding neighborhoods, the City and region. Updated baseline (environmental setting) information must include a description of changes in demand for housing in San Francisco Pre- and Post-Emergence of COVID 19. This information is not only necessary to adequately analyze environmental topics such as displacement and Project demand for new housing, but it is also essential to determining the extent to which the Project will increase commuting, traffic, transit demand, and vehicle miles traveled. Without this information, the full impacts associated with air quality and greenhouse gas emissions, among other impacts cannot be adequately analyzed and conclusions concerning the significance of Project-relation and cumulative impacts cannot be supported by facts and evidence. The DEIR must be revised to include this and other baseline information to inform revised impact analyses and conclusions. The DEIR's Analysis of, and Mitigation for, the Impacts of the Project Are Inadequate

The discussion of a project's environmental impacts is at the core of an EIR. See CEQA Guidelines Section 15126(a). As explained below, the DEIR's analysis of the Project's environmental impacts are deficient under CEQA because the DEIR fails to provide the necessary facts and analysis to support informed decisions about the Project, mitigation

measures and alternatives. An EIR must contain facts and analysis, not just bare conclusions. A conclusion regarding the significance of an environmental impact that is not based on analysis of the relevant facts fails to fulfill CEQA's information mandate.

Additionally, an EIR must identify feasible mitigation measures to mitigate significant environmental impacts. CEQA Guidelines Section 15126.4. Under CEQA, "public agencies should not approve projects as proposed if there are feasible alternatives or feasible mitigation measures available which would substantially lessen the significant environmental effects of such projects. . . ." Pub. Res. Code Section 21002.

As explained below, the DEIR fails to provide detailed, accurate information about the full breadth of the Project's potentially significant impacts with respect to growth inducement, population and housing and land use and planning. The DEIR's cumulative analysis of these impacts is also deficient. Where the DEIR fails to adequately analyze the Project-related impacts, the cumulative analysis cannot be adequate. Further, the DEIR does not identify and analyze feasible mitigation measures that would reduce or avoid such impacts.

1. The DEIR's Analysis of the Project's Growth-Inducing and Population and Housing Impacts is Flawed

The DEIR's analysis of growth inducing and population and housing impacts is flawed and conclusions reached by the DEIR that all impacts are less than significant incorrect. These topics are closely related and the two sections contain multiple cross references. Therefore, these impact topics are discussed together in this section.

CEQA requires that an EIR include a detailed statement setting forth the growth-inducing impacts of a proposed project. Pub. Res. Code Section 21100(b)(5). A proposed project is either directly or indirectly growth inducing if it: (1) fosters economic or population growth or requires additional housing; (2) removes obstacles to growth; (3) taxes community services or facilities to such an extent that new services or facilities would be necessary; or (4) encourages or facilitates other activities that cause significant environmental effects. CEQA Guidelines Section 15126.2(d). While growth inducing impacts of a project need not be labeled as adverse, the secondary impacts of growth (e.g., gentrification and displacement, demand for additional housing and services, traffic, air pollution, etc.) may be significant and adverse. In such cases, the secondary impacts of growth inducement must be disclosed as significant secondary or indirect impacts of the project. The analysis required is similar in many respects to the analysis required to analyze impacts associated with population and housing.

a. Growth Inducement Analysis is Woefully Lacking

The DEIR contains a short, 3 and 1/2-page discussion of Growth Inducing Effects. The discussion acknowledges the Project will increase the campus population by approximately 4,100 persons by 2030 and an additional 1,080 persons by 2050, including students and faculty and staff. The DEIR also calculates the multiplier of 0.73 for an additional 3,420 jobs that could

be indirectly caused or induced by the Project. The Project includes construction of 142 net new housing units/beds within the Aldea housing complex and an additional 620 new residential units for a net total of 984 new units by 2050.

The DEIR concedes "[c]ampus population growth under the proposed CPHP would not be entirely accommodated by the existing and new housing on site, and therefore would result in indirect housing demand beyond the campus site." DEIR at 5-5. The discussion provides little real analysis of the Project's potential to induce growth in accordance with CEQA, nor does the discussion reach any conclusions as to the significance of growth inducing impacts instead relying on the assertion that the growth allowed by the Project is not substantial when "compared to the study area growth projections and to the extent that demand for new housing would exceed the capacity of the market area.[4]" DEIR at page 4.12-10. Yet, the discussion does not identify any potentially significant impacts associated with population growth as a result of the elimination of the existing space ceiling and implementation of the Plan.

The DEIR goes on to state:

> "Generally, the housing demand associated with employment growth under the proposed CPHP would be satisfied by the housing that could be added in San Francisco and in other parts of the region." DEIR at 4.12-8.

San Francisco and the region has been grossly underbuilding planned housing while generating significant new jobs; facts not disclosed by the DEIR. There is no information in the DEIR about the current housing crisis in San Francisco and region as summarized below. Nor does the DEIR contain any information about housing availability in the surrounding neighborhood and City, or information about housing affordability. Moreover, the DEIR fails to describe the breakdown of new students, faculty and staff in terms of numbers by typical jobs and salaries; information critical to estimating the percent of new staff, faculty and students who qualify as low income or very low income requiring lower cost housing options. Finally, the DEIR fails to acknowledge that UCSF is a major contributor to the affordable housing crisis, and will exacerbate that crisis by building out its expansion plan without building additional units affordable to new students, faculty, staff and employees of supporting services. See Jobs Housing Nexus Analysis SF, Kaiser Marston Associates, 2018 submitted under separate cover

Instead of the required analysis, the DEIR points to the Population and Housing Section conclusion to support its cursory overview of growth inducement impacts:

> "Implementation of the proposed CPHP would induce population growth in the Bay Area, but the population growth would not be substantial in comparison to growth that is projected and planned for San Francisco and the four study area counties in Plan Bay Area 2040 and the local general plans for the study area communities. Further, the population

[4] Five county study area.

growth would not result in a demand for new housing that would exceed the capacity of the five-county market area." DEIR at 4.12-9. Emphasis added.

By comparing the Project's growth to the entire City and region, the DEIR seeks to diminish the significance of housing demand generated by the Project. There is no question the Project will generate substantial additional growth in a highly constrained neighborhood[5], by increasing the daily average population by approximately 45%, nearly 5,200 students, faculty and staff. DEIR at page 4.12-1. In addition, the Project generates an additional 3,420 jobs based on a multiplier of 0.73%; jobs that will put additional demand on a tight housing market. No information is provided about the nature of these jobs or the associated salary ranges of employees. The Project will also increase likely increase the demand for housing in the immediately surrounding neighborhoods and City as people avoid transit in a COVID worried world and seek to walk and or bike to work.

The Project most certainly will induce growth that will in turn significantly impact housing. Total new housing demand could be as high as 6,000+ units assuming that the majority of students, faculty, staff and indirect job employees are people who need housing. Lower demand for new housing, assuming all new students need housing and only 50% of faculty and staff need housing, at 4,000+ units, would still constitute a significant impact on a highly constrained housing market and could result in displacing local residents due to competition and gentrification. If demand is lower, due to a higher percent of new students, staff, faculty and indirect job employees are already housed (50%) the impact at 4,000+ units will still be significant due to the housing crisis because under either scenario, UCSF would be generating between 4 and 8 jobs for each new unit constructed. Added to the existing jobs-housing deficit in San Francisco and the region and the even greater deficit of housing affordable to low and very low income households, the growth induced by the Project would result in a significant impact on housing. Salaries disclosed for the Mission Bay Project for UCSF's workforce, suggest the majority of new students, staff and faculty will need housing affordable to low incomes. See www.payscale.com/research/USEmployer=UCSFMedicalCenter

Housing Demand Range			
Direct/Multiplier Growth at 2040 DEIR page 4.12-7	Students 504	Faculty and Staff 4,680	Multiplier/Indirect Employees: 3,420
Housing Demand Estimates	High Demand (worst case scenario 100 require housing): 504 units	High Demand: (worst case scenario 80% not housed, net new): 3,744 units	High Demand: 50% not housed, new demand):

[5] Constrained in terms of circulation and housing.

	Low Demand (50% not housed, new demand) 252 units	Low Demand (50% not housed, new demand) 2,340 units	1,760 units

These housing-related impacts are more than glossed over by a discussion that excludes any information about the dire housing crisis.

Substantial new non-residential and residential growth in San Francisco includes total population growth based on household size assumptions[6], in addition to new students, staff and faculty estimated in the DEIR to be as high as 12,220 people by 2050. DEIR at page 4.12-8. This estimate does not include indirect growth associated with the multiplier, but does assume all new growth is in San Francisco. This significant new growth will require additional public services, likely including expansion and therefore construction of facilities in the neighborhood or adjacent neighborhoods of a myriad of services. Yet the DEIR provide cursory information about these services and facilities and fails to analyze the associated impacts, including fiscal impacts. CEQA requires that if new construction of housing will occur to accommodate the Project's employees or services beyond that included in the Project, then the EIR must analyze the environmental impacts of that construction. The appropriate components for an adequate analysis include: (1) estimating the amount, location and time frame for growth that may result from the implementation of the Project (e.g., additional housing); (2) considering whether the new population would place additional demands on public services such as fire, police, recreation, emergency, health, childcare or schools; (3) applying impact assessment methodology to determine the significance of secondary or indirect impacts as a result of growth inducement; and (4) identifying mitigation measures or alternatives to address significant secondary or indirect impacts. CEQA Guidelines Appx. G Section XIII(a). The DEIR must be revised to provide this analysis and based on this analysis, to revise other environmental analyses including but not limited to population and housing, transportation, air quality, among other topics where impacts are derived in part from direct and indirect growth assumptions.

The DEIR dismissal of likely growth inducing impacts because the impacts are "impossible to determine" violates CEQA. Virtually the sum total of the discussion, below, lacks analysis and supporting facts and evidence while at the same time identifying the potential areas of significant impacts associated with significant growth:

> "While it is acknowledged above that the precise nature, location, and magnitude of effects of indirect and induced growth cannot be determined, the proposed CPHP

[6] 2.36 persons per HH; assumes only one student per HH. DEIR at page 4.12-8.

> would likely increase overall demand in the region for housing, commercial and industrial space, and associated infrastructure. Potential effects could include increased traffic congestion; increased air pollutant emissions; loss of agricultural land and open space; loss of habitat and associated flora and fauna; increased demand on public utilities and services, such as fire and police protection, water, recycled water, wastewater, solid waste, energy, and natural gas; and increased demand for housing. An increase in housing demand in the Bay Area region would also require governmental services including, but not limited to schools, libraries, and parks to serve new commercial and residential development." DEIR at 5-7.

The discussion also acknowledges that this growth could contribute to a loss of open space by converting those lands to housing, commercial space and infrastructure, but attempts to discount the many impacts associated with conversion of natural and working lands by pointing out without evidence that "most jurisdictions have adopted smart-growth policies that discourage or prohibit this type of development." DEIR at 5-7.

A revised growth inducing analysis must be included in a recirculated DEIR. The impacts of growth must also be considered in new analysis concerning the social equity impacts of the Project. See Attachment 4, Draft Planning Commission Resolution.

b. The DEIR's Analysis of and Mitigation for the Project's Population and Housing Impacts is Inadequate

The DEIR's approach to analysis of population and housing does not adequately analyze Project-related impacts associated with changes that would occur with Project implementation to the population, including employment and residential growth. Instead of actually analyzing the Project's impacts related to population and housing, the DEIR asserts that all impacts both direct and indirect will be less than significant. The DEIR lacks facts, analysis and evidence to support this conclusion. The result is a lack of information about the actual severity and extent of impacts associated with significant growth in population including students, faculty, staff and patients and visitors. For a Project that will guide development of the campus for 30+years and likely be the basis of streamlined permitting for project facilities and infrastructure, it is especially important that the DEIR comprehensively identify and analyze its impacts on growth, population, housing and employment.

In determining impact significance associated with growth in population, employment and housing, CEQA requires analysis of the following topics (substantially similar in DEIR at page 4.12-6):

- Would the project induce substantial population growth in the area, either directly (for example by proposing new homes and businesses) or indirectly (for example, through extension of roads and other infrastructure)?

- Would the project displace substantial number of existing housing units or create demand for additional housing, necessitating the construction of replacement housing?
- Would the project displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

In order to analyze the above significance thresholds, the DEIR must also address the following questions:

- Would the project result in the net loss of any existing housing units affordable to very low income or low income households through any means including gentrification?
- What is the net change in affordable versus market rate units in the surrounding neighborhoods as a result of the Project?
- Would the Project impact a disadvantaged community (DAC)?
- Would the project result in a greater imbalance between jobs and housing, including jobs housing fit?[7]

Finally, the DEIR fails to disclose the Project's inconsistency with the UCSF 2014 LRDP Community Planning Principle HI which calls for projects to make a positive contribution to San Francisco's affordable housing stock…in order to relieve housing demand in the local community. DEIR at page 4.12-4.

The DEIR's analysis of these potential impacts associated with population, employment and housing is inadequate starting with the lack of any credible environmental setting or context for the discussion including the following basic facts:

- San Francisco and the region added more jobs than housing over the last decade. Census data shows that San Francisco added 8.2 jobs per home since 2010. Overall, the Bay Area has added 2 jobs for every home built since 1990. See also Plan Bay Area Final Plan 2040, Attachment 5.
- Between 2011 and 2017, the region added 658,000 jobs and 140,000 housing units, or on average 4.7 jobs for every housing unit. SPUR Regional Strategy, Attachment 6.
- The shortfall of housing units is estimated by SPUR to be nearly 700,000 units including units to meet the needs of both middle income and lower income households. Id.

[7] Jobs-Housing fit means the extent to which housing prices or rents are matched to the local job salary ranges. Jobs-Housing balance provides a general sense of how in or out of balance housing to fit the local workforce may be. Jobs-Housing fit provides an essential and more granular sense of whether – even if in balance – local employees are able to reside locally or must commute long distances for housing affordable to them and their families. Without jobs-housing fit information, readily available using Census and other data, it is not possible for the DEIR to adequately analyze many Project-related and cumulative impacts including demand for new housing and vehicle miles traveled, among others.

- In order to meet the unmet past need plus future needs for housing, the Bay Area would need to build 45,000 units per year to produce an additional 2.2 millions units by 2070. Id.
- The production of affordable housing has lagged behind production of housing affordable to higher incomes, with significant shortfalls of housing production for moderate or middle income wage earners and lower income wage earners. From 1999 to 2014, the Bay area issued permits for only about 35% of the units to meet the needs of vulnerable populations such as low-income families. Id.
- Much of the older housing stock located in higher density areas such as San Francisco have experienced gentrification pressures due to competition from new and higher income wage earners. Id.

A revised DEIR must provide baseline information about the housing crisis and re-analyze housing-related impacts of the Project in light of that information. Based on accurate information about the pre-Covid SF and Bay Area housing crisis (summarize above), it can reasonably be concluded that the additional of 5,200 students, faculty and staff by 2050 and only 984 units produced, the housing need generated constitutes a significant impact. Demand for housing is further exacerbated by the job multiplier of 0.73 creating an additional 3,420 jobs induced by the Project. Total new housing demand could be as high as 6,000+ units assuming that the majority of students, faculty, staff and indirect job employees are people who need housing. Lower demand for new housing, based on more new staff and faculty already housed, at an estimated 4,000+ units, would still constitute a significant impact. If demand is lower, due to a higher percent of new students, staff, faculty and indirect job employees are already housed (50%) the impact at 4,000+ units will still be significant due to the housing crisis. Under either scenario, UCSF would be generating between 4 and 8 jobs for each new unit constructed. Added to the existing jobs-housing deficit in San Francisco and the region and the even greater deficit of housing affordable to low and very low income households, the growth induced by the Project would result in a significant impact on housing.

The Project is also inconsistent with the Community Planning Principle HI directed at relieving housing demand on the local community. The DEIR's conclusion that "population growth would not result in a demand for new housing that would exceed the capacity of the five-county market area," and that "CPHP's impact related to population and housing would be less than significant" is clearly incorrect.

c. A Revised DEIR Must Include Feasible Mitigation Measures and Alternatives to Address Significant Impacts to Housing

The DEIR must identify feasible mitigation measures and alternatives capable of reducing or eliminating significant impacts. The DEIR fails to do so.

In reaction to the housing crisis, SF voters passed Measure E in March 2020, limiting construction of new office building unless affordable housing goals are met. Measure E is instructive as to the kinds of mitigation measures UCSF should consider in addressing the increased imbalance of housing and jobs the Project would foster.

Feasible mitigation measures that should be included in a revised DEIR include the following:

- Increase Project housing to provide sufficient and affordable housing for new students, faculty and staff as well as a portion of induced demand (multiplier) by increasing housing proposed by the Project and decreasing new jobs.
- Provide sufficient housing in advance of the development and occupation of non-residential buildings (in line with Measure E).
- Adopt a project that adheres to the existing space ceiling thereby reducing increased staff and faculty and associated housing demand.

These and other feasible mitigation measures must be identified in a revised DEIR to address the significant population and housing impacts of the Project and cumulative development on the Project area, the City and region. A Financial Analysis should accompany the revised Plan and DEIR setting forth costs associated with housing, services and other community benefits of the Project and laying out a revised approach to funding implementation of these Project elements.

- Would the project displace substantial number of existing housing units or create demand for additional housing, necessitating the construction of replacement housing?

2. The DEIR's Analysis of Land Use and Planning Is Incomplete and Inadequate, Thereby Failing to Disclose and Mitigate Significant Impacts

The DEIR incorrectly identifies as Less Than Significant the Project's Land Use and Planning impacts. At the heart of the analysis of land use and planning impacts is the question of the Project's consistency with applicable policies and other provisions including UC's as well as the City's. Contrary to the DEIR's conclusions, the Project is incompatible with the surrounding area and conflicts with numerous policies and provisions of San Francisco's General Plan and Planning Code, as well as UC policies. Due to UC's constitutional autonomy, development and uses on property under the control of the University that are in furtherance of the University's educational purposes are not subject to local land use regulations. However, UCSF has indicated its intent to adhere to local policies and regulations to the extent practicable and to review policies germane to the analysis of land use impacts. DEIR at page 4.10-6. In the pertinent topical sections (e.g., Land Use and Planning, Noise, Aesthetics) the DEIR does describe pertinent policies and regulations, finding in each case that the Project is compatible with surrounding land uses and as such would not create any significant impacts. As described below, the analysis of land use and policy consistency is flawed and the conclusions

unsupported by evidence. Contrary to conclusions reached in the DEIR, there is evidence of policy and regulation inconsistency resulting in significant environmental impacts, only two of which – wind and cultural – are disclosed and acknowledged.

Planning and Land Use Context: The *San Francisco General Plan* provides policies and objectives to guide land use decisions and along with the San Francisco Planning Code prescribes the permitted uses and development standards to carry out the City's policies for the 107-acre Parnassus Campus site. In a 1987 Memorandum of Understanding (MOU), UCSF agree to advise and consult with the City of San Francisco on any proposed construction projects. The MOU states that the City Planning Commission will advise UCSF about the "conformance of such development with the Master Plan of San Francisco and Planning Code Section 304.5 (Institutional Master Plans) with recommendations, of any, for amendment to the proposal… Should the City Planning commission and UCSF disagree on any matter which is the subject of this MOU, either party may request the participation of the Mayor and the Chancellor in attempting to resolve the dispute." (MOU, para. IV). The DEIR must, include a complete and forthright analysis of the Project's consistency with the General Plan and other applicable planning documents, ordinances and regulations so that UCSF can honor its intent to adhere to the extent practicable, the City's policies and "zoning codes related to building use, height, and bulk limitations; floor areas; and parking requirements or restrictions for the purpose of ensuring compatibility with the surrounding uses." DEIR at page 4.10-6. Inconsistencies between the Project and the General Plan or other applicable planning documents that were enacted to protect the environment may constitute significant impacts in themselves and can also be evidence of other significant impacts that must be analyzed in the DEIR. Where elements of the Project are not part of its educational mission, and are inconsistent with the General Plan it may not be lawfully adopted or approved. Additional information is needed about the Project elements in order to describe and document how the entirety of the Project is in support of UCSF's educational mission. It is not possible to determine that without more details about how the new space will be used and occupied and for what specific purposes.

While not considered by UCSF objectives or regulations, reference is made in the UCSF 2014 LRDP, to the Community Planning Principles which were produced in collaboration with the UCSF Community Advisory Group. These Principles include the following:

- Land Use LU1. Plan for growth and renovations that are substantially consistent with use limitations and height and bulk limitations in the City planning and zoning codes that exist at the time UCSF initiates the site selection process for such growth and renovation projects. The University should consider City planning proposals that are underway. UCSF will endeavor to be consistent with applicable land use plans and mitigation approaches where consistent with UC policy, while respecting specific neighborhood plans and concerns.

- LU3. Ensure that future UCSF development is compatible with physical surroundings in use, scale, and density, and that do not negatively affect surrounding land uses.
- LU10. Work toward compliance with the Parnassus Heights space ceiling and adhere to boundaries for the Parnassus Heights Campus site.

DEIR at page 4.10-3 to 4.10-4.

The Parnassus Heights campus site, the oldest and largest of the UCSF campuses, is located in among some of the oldest neighborhoods in San Francisco, characterized by unique physical characteristics and mix of land uses including residential areas ranging from single family to multi-family housing and charming neighborhood serving commercial districts such as located along Irving and Judah Streets and 9th Avenue. In addition to Mount Sutro Open Space Reserve, several park and open space areas are located near the campus. This area is characterized by local serving streets fraught with traffic, parking congestion and lack of transit.

Compliance with the City of San Francisco's adopted policies and regulations are a key indicator of whether the Project is or is not compatible with the surrounding neighborhood. UCSF clearly understood the breaking point for compatibility in its 1976 Regents' Resolution. Recognizing the unique and constrained location the Parnassus Heights campus occupies, the Regents adopted a sensible "space ceiling" for the campus in its 1976 Regents Resolution, stating in pertinent part: "The total structures within the campus boundaries shall not exceed 3.55 million gross square feet (not including space committed to residential use on Third, Fourth, Fifth and Parnassus Avenues and Kirkham and Irving Streets) and this limit shall be permanent." See Attachment 2.

In addition, the Resolution recognizes the transportation problems in the area and commits funds to develop a plan to alleviate transportation problems including traffic, parking congestion and lack of transit.

In a letter to Chancellor Hawgood, dated January 16, 2020, Mayor London Breed, President of the Board of Supervisors Norman Yee and Supervisor Dean Preston note the need for a revised MOU to adopt and formalize arrangements for coordination and consideration of both our interests and inputs in the context of land use approvals, transportation needs and ongoing service provisions, noting the common challenges faced include housing supply, affordability and climate and seismic related risks. See Attachment 3.

In this case, after discussing only some of the applicable plans, the DEIR incorrectly concludes across the board that the Project would be compatible with adjacent lands uses and impacts would be insignificant. Some examples of the Project's glaring inconsistencies with the General Plan and Code include, but are not limited to, the following:

San Francisco General Plan and Zoning Code Excerpt	Inconsistency
Land Use and Urban Design Elements LU-2: Plan for growth and renovations that are substantially consistent with use limitations and bulk limitations in City planning and zoning codes that exist at the time UCSF initiates the site selection process for such growth and renovation projects…UCSF will endeavor to be consistent with applicable land use plans and mitigation approaches where consistent with UC policy, while respecting specific neighborhood plans and concerns. LU3. Ensure that future UCSF development is compatible with physical surroundings in use, scale, and density and do not negatively affect surrounding land uses. LU10. Work toward compliance with the Parnassus Heights space ceiling and adhere to boundaries for the Parnassus Heights campus site. Policy 3.5: Relate the height of buildings to important attributes of the city pattern and to the height and character of existing development. Policy 3.6: Relate the bulk of buildings to the prevailing scale of development to avoid an overwhelming or dominating appearance in new construction. San Francisco Planning Code – Use Districts City's P (Public) Zoning District Housing along Third and Fifth Avenues – see also Residential House District, Two-Family (RH-2) Code sections Height and Bulk Districts: 25-X, 40-X, 65-D, 80-D, 130-D and 220-F. Floor areas rations are determined by allowable height and coverage.	The DEIR correctly concludes that the New Hospital, as well as Millberry Union, certain West Side development and the Aldea Housing densification project would not be consistent with City Planning Code height and/or bulk regulations for their respective building sites. DEIR at 4.10-16. The DEIR continues on to incorrectly conclude despite evidence to the contrary, that these conflicts would not result in significant incompatibility with adjacent land uses or impacts on surrounding uses. Taking just the New Hospital as an example, at about 955,000 gross square feet and up to 294 feet in height, the New Hospital clearly demonstrates the Project's incompatibility with the surrounding area resulting in significant adverse environmental impacts including but not limited to, wind, visual and environmental impacts associated with an inadequate supply of housing affordable to new students, faculty and staff. The New Hospital is patently inconsistent with SF Land Use and Design policies and height and bulk requirements in multiple ways. First, the New Hospital is within three height and bulk districts and exceeds height limits for portions of the site within two of these, the 65-D and 22-F Height and Bulk districts, by over 70 feet and X stories. Second, the New Hospital would require use of a portion of the Reserve and would be located even closer to the off-site residences on Edgewood. The DEIR concedes: Impact AES-2 finds that the New Hospital would be the most noticeable visual change under the CPHP program, and would contrast sharply both in height and scale with the nearby residential development…". DEIR at 4.10-17. In justifying the conclusion that the New Hospital is compatible with adjacent land uses, the DEIR points to the proposed amendments to the 2014 LRDP which increase the space ceiling. In addition, the DEIR (Impact AES-3) finds that with implementation of appropriate design standards and exterior materials light and glare and other impacts would be reduced to less than significant.

	Even so, the DEIR concedes that the New Hospital will still result in significant unavoidable wind hazards. Analysis by Jared Ikeda provides clear evidence the New Hospital with also result in significant and unavoidable visual impacts. See Attachment 7. There are clear inconsistencies between the New Hospital and the City's General Plan policies and Code resulting in documented significant and unavoidable impacts associated with wind hazard, visual and housing, among other impacts. <u>These inconsistencies and the associated physical environmental impacts are not resolved by the amendment to the LRDP to raise the space ceiling.</u> Combined with other Project elements – Millberry Union, West Side – and the Project scale and bulk overall, the Project is clearly incompatible with the surrounding area resulting in significant and unavoidable impacts including those omitted from the DEIR but disclosed (wind) and some revealed by expert analysis (e.g., visual, cultural, housing). A revised and recirculated DEIR must re-analyze Project consistency with these and other applicable provisions of the City's Plans and Codes and Impact LU-2 must be found to be a significant and unavoidable impact. In addition, the Project is clearly inconsistent with CPHP Policy 3.6, which states that the height of buildings should be related to the prevailing scale and character of existing development. The New Hospital at nearly 100 feet taller than the tallest existing building on the campus, Moffit Hospital, is clearly inconsistent with this Policy. A revised DEIR must include in a revised Land Use and Planning section a systematic and thorough analysis of inconsistencies with all applicable (City, UC, other) policies and regulations.
Urban Design Element Policy 1.1: Recognize and protect major views in the city, with particular attention to those of open space and water.	The DEIR incorrectly concludes the project will not conflict with these policies and specifically that "[d]evelopment under the CPHP would not have a substantial adverse effect on a scenic vista" (AES-1) or "conflict with the applicable zoning and other

Policy 3.4: Promote building forms that will respect and improve the integrity of open spaces and other public areas.	regulations governing scenic quality" (AES-2) and therefore no mitigation is required. In his analysis of visual impacts, Jared Ikeda concludes that the New 16-story Hospital would result in significant visual impacts including specifically that it would block views to Mt Sutro and the Reserve and would block views of the ocean and Golden Gate Park from trails and other public vantage points resulting in policy inconsistencies with direct significant environmental impacts. See Attachment 7. A revised DEIR must change the disposition of these impacts (AES-1 and 2) to significant and unavoidable and identify feasible mitigation measures including alternatives to the Project.
Shadow Proposition M, adopted by the voters in 1986, added section 101.1 to the SF Planning Code and established 8 priority policies. Priority Policy No. 8 calls for the protection of parks and open space and their access to sunlight and vistas.	The DEIR incorrectly states that the implementation of the Project would not create new shadow that substantially and adversely affects the use and enjoyment of publicly accessible open spaces. In his analysis of aesthetic impacts, Jared Ikeda reviewed the DEIR's analysis with respect to shadows and reached a different conclusion documented in his letter: "It appears though that certain areas along Parnassus Avenue and Irving Street will be subject to frequent shadows throughout the year." See Attachment 7. These more frequent shadows will clearly affect the use and enjoyment of these public spaces and as such should be called out as a Significant and Unavoidable impacts of the Project as proposed. Feasible mitigation measures must be identified.
Regents' Resolution: Space Ceiling of 3.55 Million Gross Square Feet	The DEIR conveniently concludes that the impacts associated with the Project's significant increase in gross square feet (an increase of approximately 1.5 million GSF about the existing space ceiling) and population increase from 18,500 to nearly 25,000, would be less than significant because the LRDP would be amended to increase both space and population. An amendment to the space and population ceiling does not eliminate the physical environmental impacts described in the table above associated with the increased scale of the Project. Such impacts include wind hazard (found SU by the DEIR), cultural (found SU by the DEIR) and additionally,

	aesthetic (visual and shadows) and housing, among others. A revised DEIR must identify this as an inconsistency, re-analyze the associated environmental impacts and identify feasible mitigation including alternatives to Project components such as the New Hospital.

A revised DEIR must include expanded and forthright analysis of the Project's potential inconsistencies with applicable plans and policies including the City of San Francisco's, and disclose the significant and significant and unavoidable, environmental impacts associated with those inconsistencies.

In addition, a revised DEIR must include feasible mitigation measures and alternatives to reduce or eliminate the significant impacts associated with those inconsistencies. Mitigation measures including, but not limited to the following should be considered:

- Retain the space ceiling and adopt an Alternative consistent with the space ceiling and other UCSF commitments.
- Seismically upgrade the existing hospital at Parnassus in combination with a New Hospital off-site (Mission Bay, Hunters Point, see other options in Alternatives discussion below).

3. The DEIR Alternatives Analysis is Legally Deficient

Alternatives are optional ways that the Project could achieve most of the objectives while also reducing or eliminating the environmental impacts of the Project. (California Public Resources Code Section 21002). Typically, alternatives to the Project involve changes to the location, scope, design, and intensity but can also include method of construction and/or operation. Where the Project includes a mix of land use types as in the case of this Project, alternatives may also include alterations in the mix of land uses proposed in order to reduce or eliminate impacts (e.g., increase Project housing to meet demand for growth within the space ceiling).

The fundamental mandate is that "public agencies should not approve projects if there are feasible alternatives or feasible mitigation measures available which would substantially lessen the significant environmental effects of the project" (PRC Section 21002, 21081). Government agencies are required to consider alternatives to proposed actions affecting the environment. (PRC Section 21001 (g)).

The DEIR's alternatives analysis is legally deficient because it fails to describe a reasonable range of alternatives, or to the location of the Project, which would feasibly attain most of the basic objectives of the Project but would avoid or substantially lessen any of the significant effects of the Project, and evaluate the merits of the alternatives. "An EIR's discussion of alternatives must contain analysis sufficient to allow informed decision-making." (*Laurel*

Heights I, 47 Cal.3d at 404). An EIR must also include "detail sufficient to enable those who did not participate in its preparation to understand and to consider meaningfully the issues raised by the proposed project." (*Id. At 405*.)

In developing a list of alternatives for analysis, both project objectives and known or likely significant impacts of the Project must be factored in. Alternatives need not meet all of the objectives and their fundamental purpose is to reduce or eliminate Project impacts. The Project setting can also influence the range and choice of alternatives. Offsite alternatives should be considered. Offsite alternatives must be feasible (e.g., site control by Project proponent or possible for the proponent to acquire the property).

Alternatives may not be rejected merely because they are beyond an agency's authority, would require new legislation or would be too expensive. An alternative may be eliminated from further review where it fails to meet most of the basic project objectives; is infeasible; does not avoid significant environmental impacts; and implementation cannot be reasonably ascertained or is remote and speculative. (CEQA Guidelines Section 15126.6 (f)).

The DEIR's Alternatives Analysis is Legally Deficient Because it Improperly Rejects Feasible Off-Site Alternatives and Omits Others Feasible Off-Site Alternatives

Feasible alternatives to the Project that would reduce or eliminate significant Project impacts including those acknowledged by the DEIR briefly considered but dismissed include:

- No New Hospital at Parnassus Heights Campus Site/Implement Phase 2 of Medical Center at Mission Bay Campus Site
- New Hospital at Mount Zion Campus Site

Omitted from the list of feasible offsite options are:

- Seton Hall Hospital Facility, which stands empty
- New Hospital at Hunters Point, which would provide jobs in and health services to an underserved and disadvantaged community

The reasons provided in the short approximately one-page discussion dismissing the alternative of a new hospital at Mission Bay comes down to the alternatives' reported failure to meet very focused Project objectives and a purported conflict with the 2014 LRDP and CPHP. Specifically the DEIR states that the alternative would not meet some of the Project objectives (e.g., expansion of some services and other benefits from an interdisciplinary program) and would conflict with several 2014 LRDP and CPHPs objectives for Parnassus Heights campus including but not limited to adequate space to foster collaboration and to facility inter-dependence and connectivity for operational efficiency, adequate clinical and administrative support and aligned with other programs, increase in beds, and modern industry standards including seismic safety. Page 6-55 to 6-55. The discussion concedes that the alternative would reduce the significant

wind impacts, cultural and construction impacts, but that in so doing, it would likely also result in increased cross town traffic between the Parnassus and Mission Bay campus sites. Not analyzed was a combination of a smaller, new hospital at Parnassus in combination with Mission Bay; another feasible option that has the potential to address total need and allow phasing to accommodate patients and services.

Dismissal of these alternatives (New Hospital at Mission Bay and Combination of New Hospital at Mission Bay and Reduced Hospital at Parnassus) is not justified. First, the alternative would meet most of the Project objectives. If a New Hospital at Mission Bay is combined with a rebuilt smaller hospital at Parnassus, the alternative could meet the need for additional beds and services as well. The argument that this alternative would increase cross town traffic is not supported by any evidence or analysis. Finally, the conflicts with the 2014 LRDP are not persuasive since that document is being amended to break the space ceiling and this alternative would not require that significant amendment to the LRDP. In fact, the Mission Bay Hospital was justified in part by the development cap at the Parnassus Campus. These alternatives must be fully analyzed in a revised and recirculated DEIR, including additional facts and analysis to support the arguments concerning the alternatives conflicts.

The DEIR similarly dismisses the alternative of a new hospital at the Mount Zion Campus Site, stating that this alternative would result in UCSF hospitals operating at three different campus sites which would be "less than ideal and inefficient," would not help achieve the benefits realized through interdisciplinary collaboration and convergence between clinical care, research and education, land acquisition would be difficult and citing undisclosed conflicts with LRDP and CPHP objectives. The discussion concedes that the alternative would reduce the significant wind impacts, cultural and construction impacts, but that in so doing, it would likely also result in localized impacts at the Mt. Zion site and increased cross town traffic between the Parnassus and Mission Bay campus sites. This alternative also merits full analysis in a revised and recirculated DEIR because it would reduce or eliminate Project impacts and could be carried out in combination of seismic retrofits to the existing hospital at Parnassus to meet objectives and remain consistent with the space ceiling.

Alternatives may not be rejected merely because they are beyond an agency's authority, would require new legislation or would be too expensive. An alternative may be eliminated from further review where it fails to meet most of the basic project objectives; is infeasible; does not avoid significant environmental impacts; and implementation cannot be reasonably ascertained or is remote and speculative. (CEQA Guidelines Section 15126.6 (f)). Rejection of the Mission Bay and Mt. Zion sites for a new hospital, either in lieu of or in combination with a smaller hospital at Parnassus, is not supported by the evidence and analysis provided and both require full analysis in a revised and recirculated DEIR.

In addition, the revised and recirculated DEIR should also fully analyze a new hospital at Hunters Point and reuse of Seton Hall. A new hospital at Hunters point would eliminate the

significant impacts associated with the Project and provide jobs and health care to a disadvantaged and underserved community.

Since the Mission Bay alternative reduces the Project's significant impacts, while achieving almost all Project objectives, the DEIR is arbitrary and capricious for dismissing this alternative in particular from full review and in rejecting this alternative. In addition, the Mission Bay Campus was justified by the cap at Parnassus, making this alternative essential for full review. In light of the development cap at Parnassus, each of these alternatives warrants review in a revised and recirculated DEIR with priority on Mission Bay and Hunters Point.

III. The DEIR Must be Revised and Recirculated

Decision makers and the public cannot possibly assess the Project's impacts through the present DEIR which is riddled with omissions, errors and inconsistencies. Among other fundamental deficiencies, the DEIR repeatedly understates the Project's significant environmental impacts and therefore fails to formulate feasible mitigation to reduce these impacts. To resolve these issues, a revised DEIR that would necessarily include substantial new information must be prepared and recirculated.

Sincerely,

Terry Watt

Terry Watt, ACIP

ATTACHMENTS

Attachment 1: Terry Watt Qualifications

Attachment 2: 1976 Regents' Resolution

Attachment 3: Letter from Mayor and Supervisors to Chancellor Sam Hawgood, 1/16/20

Attachment 4: SF Planning Commission Resolution

Attachment 5: Excerpt Plan Bay Area 2020

Attachment 6: Excerpt SPUR Regional Strategy

Attachment 7: Aesthetic Impact Analysis, Jared Ikeda

Attachment 1

Terry Watt, AICP

Terry Watt Planning Consultants

1937 Filbert Street - San Francisco, CA 94123

terryjwatt@gmail.com Cell: 415-377-6280

Terry Watt, AICP, owns Terry Watt Planning Consultants. Ms. Watt's firm specializes in planning and implementation projects with a focus on regionally-significant land use and conservation work that advances sustainable development patterns and practices. Prior to forming her own consulting group, she was the staff planning expert with the environmental and land use law firm Shute, Mihaly & Weinberger. She is an expert in general and specific planning and zoning, open space and agricultural land conservation strategies and approaches and environmental compliance, including CEQA and NEPA. Her skills also include facilitation and negotiation, public outreach and project management. Terry is a frequent presenter at regional, national and statewide workshops and symposiums. She holds a master's degree in City and Regional Planning from the University of Southern California and a multi-disciplinary bachelor's degree in Urban Studies from Stanford University.

Terry works with a wide variety of clients throughout California including non-profit organizations, government agencies and foundations. She volunteers up to half her professional time on select projects. Recent projects and roles include:

- Project Manager and Governor's Office Liaison for San Joaquin Valley: Least Conflict Lands for Solar PV project. Project funding came from the Hewlett and Energy Foundation's, matched by environmental organizations, the California Energy Commission and other private parties. The objective of the project was to identify areas in the Valley that had very low resource values for renewable energy to serve as an incentive for development of least conflict lands rather than valuable resource lands. Watt was responsible for overall project management and day to day coordination, multi-stakeholder (150 stakeholders) and agency (57 federal, local and agency advisors) outreach and participation, facilitation of meetings, Governor's Office convening's, all project logistics and project report. Link to Collaboration Platform – Data Basin San Joaquin Valley: http://sjvp.databasin.org/
- Governor's Office Liaison and Outreach Coordinator for the State's portion of the Desert Renewable Energy Conservation Plan (DRECP). As outreach coordinator, worked closely with local governments on DRECP related consistency issues with local general plans.
- Planning Consultant to California Attorney General's Office - Environment Section focusing on climate change, CEQA and general plans. (2007- 2010). While working with the Environment Section, assisted with settlements (Stockton General Plan, Pleasanton Housing Element and CEQA litigation); identified locally based best practices for local government planning to address climate change issues; and managed government outreach and consultation on general plans and climate action plans/energy elements/sustainability planning efforts. Post 2010 continue to provide periodic consulting services to the Environment Section related to select cases.
- Strategic Advisor and Planning Consultant to the Santa Clara Valley Open Space Authority, Greenbelt

Alliance and Committee for Green Foothills for the Coyote Valley Project focused on developing a conservation and development plan for the Valley. Watt was responsible for preparing the group's early CEQA comment letter on the negative declaration for a proposed Warehouse Project and assisting with scoping comments for the EIR.

- Measure M-2 Sales Tax and Environmental Mitigation Measure. (2009-). Terry was the Co-project manager/facilitator of a 30+-member environmental coalition that through a unique partnership with the Orange County Transportation Authority (OCTA) and state and federal wildlife agencies generated nearly $500 million in funding for programmatic environmental mitigation (conservation land acquisition and stewardship) in Measure M2, Orange County Transportation Sales Tax.
- State Office of Planning and Research Special Projects (2011 – 2017). Advisor to OPR on General Plan Guidelines, Infill and Renewable Energy Templates as part of the required update of the General Plan Guidelines. Expert panelist for workshops on SB 743.
- Marin Countywide General Plan and Environmental Impact Report (2004 to 2007). Project Manager for the award-winning Marin Countywide Plan Update and its Environmental Impact Report. The General Plan was among the first to incorporate leading edge climate change, greenhouse gas emissions reduction and sustainability policies as well as monitoring, tracking and implementation measures to measure success.
- Staff to the Martis Fund, a joint project of five environmental groups and a Business Group (Highlands Group and DMB Inc.). (2008 – ongoing). The Fund was created as a result of litigation settlement. The Fund has distributed over $15 million dollars since its inception to a range of conservation (acquisition of over 5,000 acres of open space), stewardship and restoration projects and workforce housing projects (emergency rental housing support, down payment assistance and low income apartments). Funding comes from a permanent transfer fee on all real estate sales at Martis Camp. http://www.martisfund.org/PDFs/Martis-Fund-Brochure.pdf
- Tejon Ranch Land Use and Conservation Agreement. (2006 – ongoing). Project coordinator for a dialogue process between environmental groups (Natural Resources Defense Council, Sierra Club, Endangered Habitats League, Planning and Conservation League, Audubon California) and The Tejon Ranch Company that resulted in a major Land Use and Conservation Agreement for the permanent protection of 240,000+ acres (90%) of the 270,000 acre Tejon Ranch. Secretary John Laird refers to the Agreement as a "miracle" agreement. In return for permanent conservation of 240,000+ acres, environmental groups agreed not to oppose projects within the development footprints; but can comment on regional planning efforts and the projects. Terry has an ongoing role overseeing implementation of the Agreement, including early role forming and managing the Conservancy formed by the Agreement. The Agreement provided the cornerstone of the Habitat Conservation Plan for a major portion of the Ranch; the Tejon Multi-Species Habitat Conservation Plan, TUMSHP, approved in April 2013. She recently joined the Board of the Tejon Ranch Conservancy created and funded by the Agreement.
- Orange County Wildlife Corridor. Project coordinator and architect for dialogue process between environmental and conservation organizations, City of Irvine and Lennar/Five Points development team that resulted in an 8 party Agreement, related general plan amendment and full funding to build an urban wildlife corridor to the specifications of the science team (6-member team jointly selected by all groups) connecting two high value conservation areas in central Orange County (Coastal and Eastern NCCP/HCP lands). Watt provides some ongoing implementation support. Recently (2017) coordinated DEIR comments letters on two Orange County Project proposals that could adversely impact the 5 Point/Irvine Wildlife Corridor.
- Ongoing assistance and authorship of expert comments on projects with recent letters on the proposed draft Amador County General Plan on behalf of the Foothill Conservancy and the proposed Squaw Valley Resort on behalf of a coalition of environmental and labor organizations.

- Facilitator to the Bolsa Chica Land Trust for recent agreement with Landowners to purchase remaining private acres of the Bolsa Chica uplands. Currently assisting with fundraising for the property.
- Advisor to the Nature Conservancy, the American Farmland Trust, Center for Law, Energy and Environment on numerous publications concerning urban infill and conservation.

PROFESSIONAL MEMBERSHIPS AND BOARDS

- Lambda Alpha International - Golden Gate Chapter
- American Institute of Certified Planners (AICP)
- American Planning Association (APA)
- Tahoe Fund Founding Board Member
- Tejon Ranch Conservancy Board Member
- Santa Lucia Conservancy Board Member
- Founder Council of Infill Builders
- Board Member, Planning and Conservation League

AWARDS

- State and National APA Awards for Marin County General Plan
- APA Awards for South Livermore Valley Plans
- Carla Bard Award for Individual Achievement, PCL

PUBLICATIONS

Contributor to the Award Winning Textbook:

Ecosystems of California, 2016, Chapter 40:

Land Use Regulation for Resource Conservation

Attachment 2

APPENDIX F: 1976 REGENTS' RESOLUTION

"DESIGNATION OF OPEN SPACE RESERVE, ALTERATION OF CAMPUS BOUNDARIES, COMMITMENT OF HOUSES TO RESIDENTIAL USE, AUTHORIZATION TO NEGOTIATE SALE OF PROPERTIES AND COMMITMENT OF TRANSPORTATION STUDIES."

The following recommendations were approved by the Board of Regents on May 21, 1976:

1. That the reserve on Mount Sutro, which was designated as open space for a twenty-five year period by The Regents in October, 1975, be increased from fifty-two to approximately fifty-eight acres, and that the designation be made permanent.

2. That the boundaries of the San Francisco campus be altered to exclude properties on the west side of Third Avenue from 1309-11 Third Avenue to and including 1379 Third Avenue, and that the new boundaries be made permanent. The total structures within the campus boundaries shall not exceed 3.55 million gross square feet (not including space committed to residential use on Third, Fourth, Fifth and Parnassus Avenues and Kirkham and Irving Streets) and this limit shall be permanent. These restrictions prohibit expansion by UCSF by purchase or condemnation or gift of any property or lease of private residential property not only contiguous with the new campus boundaries, but anywhere within the surrounding area bounded by Golden Gate Park, Oak Street, Ninth Avenue, Clayton and Clarendon. This does not prohibit the use of commercial properties or the affiliation with other public agencies within the area described.

3. That the Regents redefine their commitment, made as part of the October, 1975, approval of the Long Range Development Plan, to return certain existing houses to residential use as alternative campus space and funds for rehabilitation and relocation become available for the activities now housed therein, and that as part of this commitment: The ten houses on Third Avenue, outside the campus boundaries revised as recommended in 2. above, be sold subject to the provisions set forth in 4. below; the thirty-four houses on Third, Fifth, and Parnassus Avenues and on Irving and Kirkham Streets be rehabilitated as required and leased for residential purposes, with priority given to University students, faculty, and staff; and the seven houses on Fourth Avenue remaining after clearance of the site for the School of Dentistry Building project be retained for non-residential campus use.

4. That the Treasurer be authorized to negotiate the sale of the lots and structures, and other improvements thereon, located at 1309-11, 1319, 1325, 1337, 1343, 1355, 1361-63, 1367-69, 1373, and 1379 Third Avenue; the lot between 1355 and 1343 Third Avenue; and the lot between 1309-11 and 1319 Third Avenue, subject to the provisions listed in 4(a) through 4(e) below and that the results of said negotiations be presented to The Regents for final approval and authority to sell based on offers acceptable to The Regents:

    (a) The offer for sale of the two vacant lots shall commence within six months and the offer for sale of all remaining properties shall commence within thirty-six months, except that no relocation of University activities or tenants or conversion of houses for residential uses shall

be initiated until funds for such purpose are on hand as specified in 4(b) below and until space into which activities or tenants can be relocated is available;

(b) A special fund shall be established to fund projects within the Capital Improvement Program for the purpose of, first, providing accommodation for activities displaced by sale of houses, second, providing accommodation for campus activities displaced by conversion of the structures retained for residential use, and, third, converting and rehabilitating the structures retained for residential use, said fund to be funded from proceeds of the sale of the properties, except as noted in 4(c) below, and, if funds are not on hand from the sale of properties, from an advance, as needed, of not to exceed $50,000 from the University Opportunity Fund, such advance to be on a revolving basis and to be repaid with proceeds, as received, from subsequent sale of properties, it being understood that, at the completion of the sale of the properties, any part of the advance not repaid shall be converted to an appropriation;

(c) The portions of the proceeds of the sales of the lots between 1309-11 and 1319, and between 1343 and 1355 Third Avenue, attributable to the eighteen parking spaces currently located thereon, shall be deposited in the Net Revenue Account of the University of California Parking System;

(d) Funds not to exceed $10,000 shall be allocated by the President obtain an appraisal of market value of the properties for use as residences; and

(e) All properties shall be sold in the then existing condition, it being made clear to the buyer that he or she may be required to conform to all applicable State and City and County of San Francisco codes in converting the structures to residential use;

5. That funds not to exceed $25,000 be allocated to the San Francisco campus from the University Opportunity Fund for the purpose of retaining an independent consultant firm to develop additional plans for the alleviation of transportation problems such as traffic, parking congestion, and availability of public transit, it being the intent that such plans be implemented to the extend feasible within resources normally available to the campus for such purposes or within additional State appropriations that might be made available for such purposes;

6. That the Long Range Development Plan for the San Francisco campus, as approved by The Regents in October, 1975, be amended to reflect the described changes in designation of open space, boundaries, and use of housing;

7. That The Regents recognize the principle that the San Francisco campus will be administered so that the annual average of the daily campus population at the Parnassus site will remain substantially in accordance with the projections set forth in the Environmental Impact Report related to the Long Range Development Plan for the campus, approved by The Regents in October 1975.

Attachment 3

OFFICE OF THE MAYOR
SAN FRANCISCO

LONDON N. BREED
MAYOR

January 16, 2020

Chancellor Sam Hawgood
University of California, San Francisco
513 Parnassus Avenue, Room 115 F, Box 0402
San Francisco, CA, 94143

Dear Chancellor Hawgood,

Happy New Year! As we begin this new year, this new decade, we look forward to continuing to work with you and the leadership of UCSF to help advance UCSF's mission of being the leading university dedicated to advancing health worldwide through preeminent biomedical research, graduate-level education in the life sciences and health professions, and excellence in patient care. We know UCSF is devoted at every level to serving the public, and the residents of San Francisco are fortunate to have your 22,500 employees serving them, as well as, to benefit from the nearly $6.5 billion you generate annually for the Bay Area economy.

Working collaboratively has been the hallmark of the City and County of San Francisco and UCSF's relationship over the years. As examples, we can proudly point to UCSF's partnership with our Department of Public Health in operating Zuckerberg General Hospital, or more recently, your assistance reviewing the methodology of the environmental testing surrounding the Shipyard at Hunter's Point. Indeed, both the City and UCSF tremendously benefit from working together.

To that end, and to further this collaborative spirit, as UCSF embarks on its rebuild and, truly, its reimaging of its Parnassus Height Campus, we propose that the City's Planning Department convene a City stakeholder process and directly engage with your planning team on the future design and uses of the campus. We are well aware of your growing needs and of the public's growing demands on your health care system and the services you provide. However, we want to ensure that as UCSF moves forward with its proposal, the input of the City's Planning Department and UCSF's surrounding neighborhoods are heard.

Moreover, as we discuss the growth at Parnassus Heights, the common challenges we both face – housing supply, affordability, transportation infrastructure, demand for more community and social services, and climate and seismic related risks – should be addressed in manners consistent with both UCSF's and the City's polices. By working with the City's Planning Department, the Mayor's office, District Supervisors, and neighborhood residents, we are confident such challenges can be met to address both of our short term and long-term needs.

1 DR. CARLTON B. GOODLETT PLACE, ROOM 200
SAN FRANCISCO, CALIFORNIA 94102-4681
TELEPHONE: (415) 554-6141

OFFICE OF THE MAYOR
SAN FRANCISCO

LONDON N. BREED
MAYOR

In 2007, the City and County of San Francisco entered into a Memorandum of Understanding with San Francisco State University, as they embarked on their own campus redesign, which adopted and formalized arrangements for the coordination and consideration of both of our interests and inputs in the context of land use approvals, transportation needs, and ongoing service provisions. This is a model of collaboration that we recommend we pursue jointly as you move forward with the Parnassus project. As a first step in this process, we would like to meet with you and your team to outline a proposal for how such an MOU could be adopted by both of us. Should you have any initial questions or comments, please do not hesitate to contact any one of us. We look forward to discussing this further.

Sincerely,

London N. Breed
Mayor, City and County of San Francisco

Norman Yee
President, San Francisco Board of Supervisors

Dean Preston
Member, San Francisco Board of Supervisors, District 5

1 DR. CARLTON B. GOODLETT PLACE, ROOM 200
SAN FRANCISCO, CALIFORNIA 94102-4681
TELEPHONE: (415) 554-6141

Attachment 4

SAN FRANCISCO
PLANNING DEPARTMENT

Executive Summary
Policy and Planning Amendment
HEARING DATE: JUNE 11, 2020

1650 Mission St.
Suite 400
San Francisco,
CA 94103-2479

Reception:
415.558.6378

Fax:
415.558.6409

Planning
Information:
415.558.6377

Project Name:	**Centering Planning on Racial and Social Equity**
Case Number:	**2016-003351CWP**
Staff Contact:	Miriam Chion, Housing and Community Equity Manager miriam.chion@sfgov.org (415) 575-9124
Reviewed by:	Rich Hillis, Planning Department Director
Recommendation:	**Adopt the Resolution**

PROPOSED POLICY AND PLANNING AMENDMENT

In the context of the recent displays of institutional and structural racism and white supremacy, and the responding popular outcries for deep and lasting transformation, the Planning Department Staff prepared a Resolution requested by the Planning Commission to consider and adopt regarding the centering of the Planning Department's work program and resource allocation on racial and social equity. The Resolution acknowledges and apologizes for the history of inequitable Planning policies resulting in racial disparities; directs the Planning Department to implement its Racial and Social Equity Action Plan; directs the Planning Department to develop proactive strategies to address structural and institutional racism in collaboration with Black and American Indian communities and Communities of Color; directs the Planning Department to amend its hiring and promotion practices to ensure the Department's staff reflects the diversity and demographics of the community at all staff levels; recommends that the Board of Supervisors condemn discriminatory government actions; and directs the Planning Department to build accountability through metrics and reporting.

Attachments:
Exhibit A: Draft Planning Commission Resolution

SAN FRANCISCO
PLANNING DEPARTMENT

1650 Mission St.
Suite 400
San Francisco,
CA 94103-2479

Reception:
415.558.6378

Fax:
415.558.6409

Planning
Information:
415.558.6377

Draft Planning Commission Resolution
Centering Planning on Racial and Social Equity
HEARING DATE: JUNE 11, 2020

Project Name:	**Racial & Social Equity Initiative**
Case Number:	2016-003351CWP
Staff Contact:	Miriam Chion, Housing and Community Equity Manager miriam.chion@sfgov.org; 415-575-9124
Reviewed by:	Rich Hillis, Director Planning Department

RESOLUTION CENTERING THE PLANNING DEPARTMENT'S WORK PROGRAM AND RESOURCE ALLOCATION ON RACIAL AND SOCIAL EQUITY; ACKNOWLEDGING AND APOLOGIZING FOR THE HISTORY OF INEQUITABLE PLANNING POLICIES THAT HAVE RESULTED IN RACIAL DISPARITIES; DIRECTING THE DEPARTMENT TO IMPLEMENT ITS RACIAL AND SOCIAL EQUITY ACTION PLAN; DIRECTING THE DEPARTMENT TO DEVELOP PROACTIVE STRATEGIES TO ADDRESS STRUCTURAL AND INSTITUTIONAL RACISM, IN COLLABORATION WITH BLACK, AMERICAN INDIAN AND COMMUNITIES OF COLOR; DIRECTING THE DEPARTMENT TO AMEND ITS HIRING AND PROMOTION PRACTICES TO ENSURE THAT THE DEPARTMENT'S STAFF REFLECTS THE DIVERSITY AND DEMOGRAPHICS OF THE COMMUNITY AT ALL STAFF LEVELS; RECOMMENDING THAT THE BOARD OF SUPERVISORS CONDEMN DISCRIMINATORY GOVERNMENT ACTIONS; AND, DIRECTING THE DEPARTMENT TO BUILD ACCOUNTABILITY THROUGH METRICS AND REPORTING.

PREAMBLE

WHEREAS, the Planning Commission has reflected on the current events of COVID-19 and its disproportionate effects on American Indian communities, Black communities, and communities of color; the murders of George Floyd, Breonna Taylor, Ahmaud Arbery, Alex Nieto, Mario Woods, Luis Góngora Pat, and countless others as a result of police brutality and misconduct; and underlying government and economic structures that create the platform for these events; and

WHEREAS, the San Francisco Human Rights Commission states that racial equity means the systematic fair treatment of people of all Races that results in equal outcomes, while recognizing the historical context and systemic harm done to specific racial groups; and,

WHEREAS, San Francisco has a long history of creating and/or enforcing laws, policies, and institutions that have promoted white supremacy and perpetuated racial inequities in the City and County of San Francisco ("the City"), much of which is difficult to document due to historical erasure. The conditions that have created such racial inequities are also compounded by the intersection of race with class, gender,

sexuality, immigration status, disability, and other social identities and experiences that result in inequitable treatment or opportunities; and,

WHEREAS, using the power of zoning and land use, the City, its Planning Department ("Department") and other government agencies and private organizations have intentionally advanced policies aligned with white supremacy to segregate, displace, dispossess and extract wealth from Black communities, the American Indian community, and other communities of color. With the acknowledgement that this list is by no means exhaustive, examples include but are not limited to the following: Our history of state-sanctioned racism began with the genocide, exploitation, and dispossession of resources of the American Indian people on whose land our state and nation were founded. The City's 1870 Cubic Air Ordinance and 1880 Laundry Ordinance targeted the Chinese population using appeals of public safety to limit where they could live and work. Starting in the 1930s, Federal policies like redlining and local practices like racial covenants explicitly blocked American Indians, Black people and people of color from loans for homeownership and maintenance, as well as access to neighborhoods with good services and jobs; these policies led to cycles of disinvestment, segregation and poverty concentration among these communities. In 1942, in response to the bombing of Pearl Harbor, San Francisco aided the federal government in the forced eviction and internment of thousands of people of Japanese ancestry. In 1945, the Department identified neighborhoods that were predominately people of color as "blighted," including the Western Addition, South of Market, Chinatown, the Mission, and Bayview/Hunter's Point, and used this designation to justify the wholesale removal of Black communities and other communities of color through eminent domain. Furthermore, in the early 2000s, people of color were more likely to receive subprime housing loans than White borrowers. These predatory lending practices led to the foreclosure crisis starting in 2008, disproportionately impacting Black, Latinx, American Indian, and low-income people; during this period, middle-income Black and Latinx households lost nearly one-half of their wealth due to foreclosure. The cumulative impacts of these and other policies have resulted in the persistent outmigration and displacement of communities of color: the American Indian community in San Francisco experienced a decline from 0.5% of the population in 2006 to 0.1% today; while the Black community in San Francisco decreased from 11% of the City's population in 1990 to 5% in 2018; and,

WHEREAS, Although the City has taken steps to undo the damage caused by past policies and practices, the racial disparities caused continue to the present day. Despite progress in addressing explicit discrimination, racial inequities continue to be deep, pervasive, and persistent in San Francisco. In the 1950s and beyond, particularly in the context of a national Civil Rights Movement, systemic racism in San Francisco became much less explicit. Moving away from overtly race-based exclusionary policies regarding land or business ownership, the City's more recent and increasingly sophisticated racism has been defined by inaction or lack of intervention with regards to racial discrimination in employment, housing, neighborhood choice (through implicit exclusionary zoning), education, health care, or the criminal justice system; and,

WHEREAS, the legacy of these discriminatory policies is that San Francisco's American Indian, Black , and people of color have historically been, and many currently are, denied equal access to essential services and means of creating wealth, including affordable housing and homeownership opportunities, high-performing public schools, adequate transportation options, safe parks and open spaces, affordable health care, access to financial capital and entrepreneurship opportunities, and stores selling healthy food, among others; and,

WHEREAS, San Francisco's American Indian, Black, and people of color have historically been, and many currently are, disproportionately exposed to more environmental stressors including air and soil pollution, illegal dumping, industrial uses and transportation impacts, and are more likely to live in housing conditions where degraded indoor air quality contributes to the prevalence of asthma, other airborne diseases, and other health disparities; and,

WHEREAS, stark disparities continue to exist for City residents along racial lines. Race predicts worse outcomes for people of color across key indicators, including education, income, health, and incarceration, among others. For example, household income for White households is close to three times that of Black families and close to double that of American Indian and Latinx households, respectively. 53% of inmates in San Francisco County Jail are Black, while they only comprise about 5% of the City's total population. In 2018, American Indian and Black San Franciscans were more than three times more likely to be unemployed than Whites (11.9% and 12.5% versus 3.6%, respectively); and unemployment rates were similarly high for Native Hawaiian / Pacific Islanders (8.8%) and Latinxs (9.4%); and,

WHEREAS, The 2019 San Francisco Community Health Needs Assessment conducted by the San Francisco Health Improvement Partnership ("SFHIP") found that racial health inequities and poverty were foundational issues affecting the health of San Franciscans, impacting life expectancy, infant and maternal health, nutrition, stress, heart disease, and more. For example, in 2015-2017 the life expectancy in San Francisco was 72.1 years for Blacks, 76 years for Pacific Islanders, 81.7 years for White people, 85.1 years for Latinxs, and 87 years for Asians. (San Francisco data on American Indians was not included; such data is often unavailable in urban areas due to low population counts, which perpetuates disparities in documentation and policies that address their community needs.) The rates of asthma and COPD hospitalizations in the Black community are more than 10 times higher than for Asians; Pacific Islanders have the second highest rates. In San Francisco, Black women are twice as likely as White women to give birth prematurely, and Black and Pacific Islander women have the highest rates of prenatal morbidity. SFHIP also found that between 2007 and 2016, Black mothers had about 4% of births in San Francisco, but experienced 50% of maternal deaths, and 15% of infant deaths. While data on health outcomes in the American Indian population in San Francisco is limited, this community also faces persistent health disparities across a number of indicators. For instance, even though the overall rate of infant mortality in California has been declining since 2005, the American Indian/Alaska Native infant mortality rate in California remains high, averaging 6-7 infant deaths per 1,000 live births between 2005 and 2012; and,

WHEREAS, the impact of the redlining that went into effect in 1937 in San Francisco can still be seen today: 87% of redlined neighborhoods in San Francisco are neighborhoods currently undergoing displacement. The 2010 Census data showed a decline in the number of children of every racial group (including American Indian, Black, Latinx, and Asian and Pacific Islander) residing in San Francisco except white and multiracial children. Between 1990 and 2014-15, as housing prices rose, neighborhoods became more segregated, with the share of Black households in San Francisco living in high-poverty neighborhoods increasing from 41% in 2000 to 65% in 2015 (compared to Asian (27%), Latinx (19%), and White (12%) households). 50% of Black households, 31% of American Indian, and 30% of Latinx households are severely burdened by housing costs (spending more than 30% of their income on housing) while 16% of White households are similarly burdened. American Indian, Black, and Latinx residents have the lowest home ownership rates, at 0.3%, 4%, 9%, respectively. Latinxs reported the highest percentage of having been

threatened with eviction (24%), with 11% of those evictions having been raised with no cause, exceeding the percentage of no-cause evictions for other racial groups. 34% of Latinxs also reported having faced unstable living conditions in the last five years, with 36% stating they would have no other housing options if they were forced to move from their current residence.

WHEREAS, racial disparities in the rates of infection and death from COVID-19 have been documented, with American Indian, Black, and people of color disproportionately impacted by the disease. As of June 3rd, 2020 COVID-19 data for San Francisco, , indicate that Black communities in San Francisco comprised 9.3% of deaths, even though they comprise 5% of the population; Latinx communities comprised 47.8% of diagnosed cases (and comprise 15.2% of the population); American Indian communities comprised 0.4% of diagnosed cases (and comprise 0.1% of the population); and Asian communities comprised 46.5% of deaths (and comprise 34.1% of the population). In the April 2020 UCSF assessment in Mission District, 90% of the Latinx people tested for COVID-19 were positive, The health and economic impacts of the pandemic are exacerbating the existing disparities; and,

WHEREAS, Black and American Indian people are overrepresented among the homeless population. The 2019 San Francisco Homeless Count and Survey found that 37% of people experiencing homelessness were Black, while they represent only 5% of San Francisco's population. Overrepresentation in the homeless population was also high for American Indians (5% compared to 0.1%) and Pacific Islanders (2% compared to 0.2%). Of all people surveyed, 61% reported not being able to afford rent and 37% reported having no income. Discrimination and lack of access to opportunities for American Indian, Black and people of color put them at a higher risk of homelessness; and,

WHEREAS, San Francisco and other cities across the nation are part of a movement to eliminate institutional racism in partnership with the Government Alliance on Race and Equity (GARE), a national network dedicated to achieving racial equity and advancing opportunities for all. The Department's ongoing participation in GARE since January 2016 has given staff the training, tools, and support to build the Department's organizational capacity to advance racial equity in its programs, policies, and services; and,

WHEREAS, the Board of Supervisors, through Resolution No. 190547 on July 11, 2019, amended the Administrative Code to create an Office of Racial Equity as a Division of the Human Rights Commission, with authority to create a citywide Racial Equity Framework, analyze the impact of Board ordinances on racial equity, and create a racial reconciliation process; require City departments to create Racial Equity Action Plans and to provide annual updates on such Plans; require City departments to designate employees as racial equity leaders, and require the Department of Human Resources to produce an annual report concerning racial equity in the City workforce; and,

WHEREAS, in the coming years the Department will amend the General Plan through adoption of updated Housing and Transportation Elements, adoption of a Preservation Element, and updates to incorporate environmental justice, racial and social equity, and climate resilience across all relevant elements. On May 28, 2020, the Department launched the first of these updates: the Housing Element 2022 Update. The Housing Element policies will be grounded on the following values: racial and social equity, minimum displacement, more housing for all in all neighborhoods, and neighborhoods resilient to climate and health crises. The Transportation Element will be the next Element to undergo an update and will center its

policies in ConnectSF's goals of equity, economic vitality, environmental sustainability, safety and livability, and accountability and engagement; and,

WHEREAS, the Planning Commission (Commission) adopted the Racial & Social Equity Action Plan, Phase I on November 21, 2019 to guide the Department and Commission actions to strengthen our internal-facing processes and practices to address disparities in the Department's internal functions to advance organizational equity, through strategies that include: ongoing training for all staff; a biannual staff survey to assess Department attitudes and progress towards racial and social equity; and an interim Racial & Social Equity Assessment Tool to apply to relevant projects, policies, and practices; and,

WHEREAS, the Planning Commission adopted a Racial & Social Equity Vision on November 21, 2019, which envisions: inclusive neighborhoods that provide all with the opportunity to lead fulfilling, meaningful, and healthy lives; a city where public life and public spaces reflect the past, present and future of San Franciscans; a city where a person's race does not determine their lives' prospects and success; an inclusive Planning Department and Commissions that represent and engage the communities we serve; a Department that proactively infuses racial and social equity in both internal operations and external Planning work; and reimagines what the Planning field is and can be – inclusive, diverse and one that centers racial and social equity both as a practice and as an indicator of success; and

WHEREAS, the Planning Commission directed the Department to develop a Racial & Social Equity Action Plan, Phase II in collaboration with the new Office of Racial Equity, other City agencies, the Mayor's Office, the Board of Supervisors, and community stakeholders, to carefully examine and address legacy racial and social inequities and disparities in the Department's programs and policies and to develop Phase II with bold and forward-thinking strategies to advance racial and social equity in San Francisco; and,

MOVED, that the Commission considered public comment and reviewed the information before them and hereby adopts this Resolution.

FINDINGS

Having reviewed the materials identified in the preamble above, and having heard all testimony and arguments, this Commission finds, concludes, and determines as follows:

The Resolution directs the Planning Department to center its work program and resource allocation on racial and social equity; acknowledges and apologizes for the history of racist, discriminatory and inequitable planning policies that have resulted in racial disparities; directs the Department to develop proactive strategies to address and redress structural and institutional racism, in collaboration with Black and American Indian communities and communities of color; directs the Department to amend its hiring and promotion practices to ensure that the Department's staff reflects the diversity and demographics of the community at all staff levels; recommends that the Board of Supervisors condemn discriminatory government actions; and directs the Department to build accountability through metrics and reporting.

General Plan Compliance. The Resolution is in conformity with the General Plan's overall principles and discussion of preserving the cultural and economic diversity of our neighborhoods, although further changes to the General Plan may be needed to implement better the Planning Department's racial and social equity policies. While the current General Plan contains some discussion of equity as indicated in the

sections listed below, current objectives and policies across Elements do not adequately address disparities that are closely associated with race as well as other vulnerable populations.

I. HOUSING ELEMENT

POLICY 5.3. Prevent housing discrimination, particularly against immigrants and households with children.

POLICY 9.3. Maintain and improve the condition of the existing supply of public housing, through programs such as HOPE SF.

II. COMMERCE AND INDUSTRY ELEMENT

OBJECTIVE 3. PROVIDE EXPANDED EMPLOYMENT OPPORTUNITIES FOR RESIDENTS, PARTICULARLY THE UNEMPLOYED AND ECONOMICALLY DISADVANTAGED.

III. RECREATION AND OPEN SPACE ELEMENT

POLICY 1.2. Prioritize renovation in highly-utilized open spaces and recreational facilities and in high needs areas.

IV. TRANSPORTATION ELEMENT

POLICY 1.7. Assure expanded mobility for the disadvantaged.

V. COMMUNITY FACILITIES ELEMENT

POLICY 3.6 Base priority for the development of neighborhood centers on relative need.

VI. COMMUNITY SAFETY ELEMENT

OBJECTIVE 4. ASSURE THE SOUND, EQUITABLE AND EXPEDIENT RECONSTRUCTION OF SAN FRANCISCO FOLLOWING A MAJOR DISASTER.

VII. ARTS ELEMENT

OBJECTIVE II-2. SUPPORT ARTS AND CULTURAL PROGRAMS WHICH ADDRESS THE NEEDS OF DIVERSE POPULATIONS.

VIII. AIR QUALITY ELEMENT

POLICY 4.3. Minimize exposure of San Francisco's population, especially children and the elderly, to air pollutants.

IX. BAYVIEW HUNTERS POINT AREA PLAN

OBJECTIVE 15. COMBINE SOCIAL REVITALIZATION WITH PHYSICAL AND ECONOMIC REVITALIZATION EFFORTS.

POLICY 15.3. Make maximum use of Indigenous community resources to increase civic pride and support physical and economic revitalization.

X. CHINATOWN AREA PLAN
OBJECTIVE 1. PRESERVE THE DISTINCTIVE URBAN CHARACTER, PHYSICAL ENVIRONMENT AND CULTURAL HERITAGE OF CHINATOWN.

XI. EAST SOMA AREA PLAN
OBJECTIVE 7.3. REINFORCE THE IMPORTANCE OF THE SOUTH OF MARKET AS THE CENTER OF FILIPINO-AMERICAN LIFE IN SAN FRANCISCO.

XII. MISSION AREA PLAN
OBJECTIVE 7.3. REINFORCE THE IMPORTANCE OF THE MISSION AS THE CENTER OF LATINO LIFE IN SAN FRANCISCO .

XIII. WESTERN SOMA AREA PLAN
OBJECTIVE 9.4 REINFORCE THE IMPORTANCE OF THE SOUTH OF MARKET AS A CENTER FOR FILIPINO-AMERICAN AND LGBTQ LIFE IN SAN FRANCISCO.

POLICY 9.4.3. Protect and support Filipino, LGBTQ and other minority or culturally significant local business, structures, property and institutions in Western SoMa.

POLICY 9.4.6. Prioritize maintenance and support funding for cultural and service facilities that support Filipino-Americans, such as the Bayanihan Center, the Filipino Education Center, and the West Bay Pilipino Multi-Services Center.

THEREFORE, BE IT RESOLVED, that the Planning Commission condemns all forms of racism, sexism, homophobia, ableism, and other forms of discrimination; and affirms that all people – which explicitly includes American Indian people, Black and people of color – have a right to be in our City and have a right to safe and affordable housing, neighborhoods free from pollution and violence, opportunities for educational advancement and wealth creation, and access to essential services such as parks, transportation, health care, and places selling healthy food, among others; and,

BE IT FURTHER RESOLVED, that the Planning Commission stands in solidarity with the civil unrest and demands for justice of our fellow San Franciscans and communities across the nation, and affirms that Black Lives Matter; and,

BE IT FURTHER RESOLVED, that the Planning Commission must carry its responsibility for guiding the development of our city, streets, and open spaces with a central planning focus on racial and social equity; and,

BE IT FURTHER RESOLVED, that the Planning Commission condemns and apologizes for government practices that have resulted in and continue to have disproportionate impacts upon American Indian people, Black people, and people of color, including racist, discriminatory, and inequitable land use planning policies, programs and government actions, such as redlining, exclusionary zoning, racial covenants, urban renewal and discriminatory enforcement of land use policies; and,

BE IT FURTHER RESOLVED, that the Planning Commission recommends that the Board of Supervisors condemn all discriminatory government practices, including law enforcement practices that have resulted in a disproportionate number of American Indian people, Black people and people of color dying at the hands of law enforcement; and,

BE IT FURTHER RESOLVED, that the Planning Commission recommends that the Board of Supervisors reallocate resources towards expanding access to open space, housing, transportation, and services for American Indian, Black, and communities of color; and that it minimize the negative impacts of budget cuts due to the COVID-19 pandemic on these communities; and,

BE IT FURTHER RESOLVED, that the Planning Commission directs all Department staff to move beyond acknowledgement of injustice and take concrete actions that are visible in the reallocation of resources and work program to (1) increase the American Indian and the Black population and provide stability to communities of color; (2) expand access to open space, housing, transportation, quality amenities and public services, and reduce exposure to environmental pollution in these communities, while ensuring that such investments do not lead to displacement or exacerbate inequities; and, (3) develop and expand participation for American Indian, Black and communities of color ; and

BE IT FURTHER RESOLVED, that the Planning Commission directs the Department to collaborate with the Office of Racial Equity (ORE) to align its work with ORE's framework to dismantle structural and institutional racism, which asserts that the City's work shall: (1) Affirmatively address racial and social inequities; (2) Assert that housing is a human right, and prioritize equitable housing development without displacement of American Indian, Black, and communities of color; (3) Develop public land strategies to meet affordable and inclusionary housing goals; (4) Support wealth-building through home ownership for American Indian, Black, and communities of color; (5) Champion housing choice by dismantling exclusionary zoning policies; (6) Promote environmental justice; and (7) Redress the consequences of government-sanctioned racial harm via meaningful City-supported, community-led processes; and,

BE IT FURTHER RESOLVED, that the Planning Commission directs Department staff to expand the implementation of Phase I of the Racial & Social Equity Action Plan, to ensure that the Department's internal practices are thoughtfully examined and amended to advance racial and social equity across all of its core functions; and

BE IT FURTHER RESOLVED, that the Planning Commission directs Department staff to devote the resources necessary for the successful completion and implementation of Phase II of the Racial & Social Equity Action Plan to ensure that its plans, policies and programs actively address and redress structural and institutional racism; and,

BE IT FURTHER RESOLVED, that the Planning Commission directs Department staff to address racial and social equity as it develops policies and programs to respond to the health, economic and housing crises resulting from the COVID-19 pandemic, prioritizing meeting the needs of Black communities, American Indian communities, and communities of color through its policies and programs to support the adaptive use and design of the public realm, community engagement and planning, protection of tenants and cultural resources, affordable housing preservation and production, streamlining and other support for small businesses, and funding for public services and infrastructure, among others; and,

BE IT FURTHER RESOLVED, that the Planning Commission directs the Department to assess, strengthen and fund its outreach and engagement strategies to ensure that American Indian, Black and communities of color have true access to representation and participation in planning processes, as well as resources for participatory capacity building; and,

BE IT FURTHER RESOLVED, that the Planning Commission directs the Department to amend the General Plan to incorporate policies that explicitly prioritize racial and social equity for American Indian communities, Black communities, and communities of color; that subsequent amendments to the General Plan utilize a racial and social equity lens; and

BE IT FURTHER RESOLVED, that the Planning Commission directs the Department to change hiring and promotion practices to correct the underrepresentation of American Indian people, Black people, and people of color across all staff levels and ensure the workforce reflects the needs of our communities; and,

BE IT FURTHER RESOLVED, that the Planning Commission directs the Department to build accountability by identifying actions it will implement to advance racial and social equity, including developing performance measures, incorporating a racial and social equity lens in budgeting decisions, and reporting to the Commission on its progress at regular intervals; and,

BE IT FURTHER RESOLVED, that the Planning Commission asserts that the responsibility for implementing these structural and institutional changes falls upon all Department staff, across all levels and functions, and that it should not fall solely or disproportionately upon the American Indian, Black, or people of color staff who are already burdened with their lived experiences of racism; and,

NOW THEREFORE BE IT RESOLVED that the Commission hereby APPROVES the proposed Resolution on June 11, 2020.

Jonas P. Ionin

Commission Secretary

AYES:

NOES:

ABSENT:

ADOPTED:

Attachment 5

The Regional Housing Crisis

No matter what, the future will bring major challenges. Overburdened infrastructure, climate change, disruptive technological innovation, and the changing regional and national economy are just some of the many issues that will call for coordinated and concerted regional action. One challenge above all, however, requires immediate attention: housing.

The Bay Area's housing affordability and neighborhood stability crisis has been decades in the making. Although the housing crisis has many components, its foundation is clear: there simply is not enough housing, whether market-rate or affordable, given the growing number of residents and jobs.

Instead of increasing housing supply to accommodate household and employment growth, for example, many local governments slowed permitting over time. Concurrently, the state and federal governments have pulled back financial support for affordable housing. Given a limited supply of both market-rate and affordable housing, combined with strong demand driven by exceptional regional economic performance, rents and home prices have risen rapidly. Today the Bay Area may have the most severe housing crisis of any of the nation's large metro areas and, at this time, there are limited policy tools to help address the problem at a regional level.

Supply, Demand and the Impacts of Income Inequality

The Bay Area's rate of housing construction first started to lag in the mid-1970s. Each subsequent decade has seen lower levels of overall housing permitting, as seen in Figure 1.2. Since 1990, other metropolitan regions with strong economies and growing populations, such as Washington, D.C., Seattle and Denver, have permitted housing units at significantly higher rates than the Bay Area. New housing construction in the Bay Area has been much more akin to slower growing, older metropolitan regions such as Philadelphia and New York.

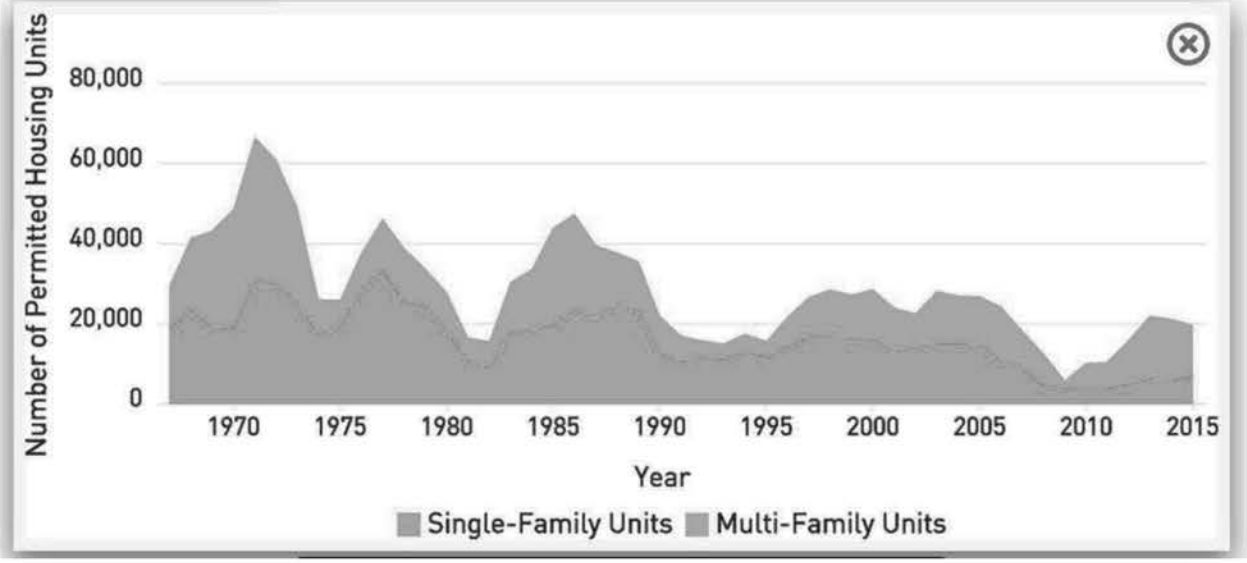

FIGURE 1.2 The historical trend for annual permitted housing units in the Bay Area. This graph shows the historical trend of permitted units for both single-family and multi-family units in the Bay Area, stretching back several decades. As can be seen, annual growth in permitted units stagnated even during the employment booms of the 1990s and 2010s.
Source: Vital Signs; Construction Industry Research Board, 1967–2010; California Homebuilding Foundation/Construction Industry Research Board, 2011–2015

There has been a particular mismatch between employment growth relative to the housing supply. Overall, the Bay Area has added nearly two jobs for every housing unit built since 1990. The deficit in housing production has been particularly severe in terms of housing affordable to lower- and middle-wage workers, especially in many of the jobs-rich, high-income communities along the Peninsula and in Silicon Valley. The booming regional economy combined with increased household formation among the millennial generation has further contributed to an evermore-acute housing crunch.

The widening income gap between high- and low-income households has further exacerbated the housing crisis. As seen in Table 1.1, the total number of households in the nine-county Bay Area increased by 20 percent from 1990 to 2015. The vast majority of this growth, however, was concentrated among households earning $150,000 or more annually, with the remaining growth among households earning less than $35,000 a year. Over a period spanning 25 years, there was a net decrease in the number of households earning between $35,000 and $149,999 in the Bay Area, as these households declined from 64 percent to 52 percent of total households in the region.

Bay Area Household Income*	1990		2015		Change from 1990 to 2015	
	Number of Households	Percent of 1990 Total**	Number of Households	Percent of 2015 Total**	Growth/ (Decline) in Households	Percent of Household Growth
Less than $35,000	446,000	20%	550,000	20%	104,000	+23%
$35,000 to $74,999	645,000	29%	625,000	23%	(20,000)	-4%
$75,000 to $149,999	785,000	35%	793,000	29%	8,000	+2%
$150,000 or more	375,000	17%	741,000	27%	366,000	+80%
Total Households	2,251,000		2,709,000		458,000	+20%

* Income shown in inflation-adjusted 2015 dollars.
** Values may not sum due to rounding.

TABLE 1.1 A comparison of the number of households by income level in the Bay Area over a 25-year period from 1990 to 2015.
From 1990 to 2015, households earning more than $150,000 a year have greatly increased their share of the total number of households in the region and comprised a vast majority of the regional growth in households over the same period. As a share of total households, those earning between $35,000 and $149,999 have declined significantly and in absolute numbers have either stagnated or decreased.
Source: U.S. Census Bureau, 1990; U.S. Census Bureau/American Community Survey, 2015 (Social Explorer)

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These dynamics have had significant implications for the Bay Area housing market. With the increased number of higher income households and most income growth going to the top 20 percent, demand for housing has remained very strong at the upper end of the market. Conversely, it has become more difficult for low- and middle-wage households to compete for market-rate housing as a larger pool of high-wage workers bid up a limited housing supply. This has further intensified competition for scarce affordable housing opportunities.

Policy Contributors to the Housing Crisis

What led to such a mismatch between housing supply and demand? Why does the Bay Area today lack so much needed housing, especially housing affordable to low- and moderate-income households? The causes of this situation are complex and there are many competing interpretations of the available evidence, including a range of economic and demographic factors that extend beyond the Bay Area itself.

Generally, however, the policy drivers — things that local, regional and state governments have the power to address or alleviate — fall into a few interrelated categories: regulatory barriers and tax policy challenges that act to restrict the production of all types of housing, especially infill development; and insufficient support for affordable housing.

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Regulatory Barriers and Tax Policy Challenges

Although the availability of developable land in the Bay Area is limited due to topography and protected conservation lands, state and local regulations often prevent instead of promote higher-density, mixed-use development in urban infill areas. Lengthy review processes in many communities stall transit-oriented projects long enough to make them infeasible, leading to the loss of grant funding and private investment that would otherwise flow into cities along with desperately needed new housing. The California Environmental Quality Act (CEQA) often acts as another obstacle to both affordable and market-rate housing. Although CEQA has been essential for improving air quality and protecting natural habitats, the law is sometimes used as a litigation tool for blocking projects that are otherwise designed to advance California's environmental policy objectives, such as reducing greenhouse gas (GHG) emissions.

In addition, the current approach to taxation creates incentives to attract development that maximizes sales tax revenues and minimizes costs for public services (such as schools, police and social services), rather than encouraging more balanced approaches to land use. This trend — the so-called "fiscalization of land use" — has discouraged housing development and small business growth in many communities. The tax revolt measures of 40 years ago, such as Proposition 13 and other restrictions on new funding sources, caused many jurisdictions to view housing as a "fiscal loser" because property tax rates were capped below the cost of delivering services compared to retail or commercial development. Commercial property owners also often lack the motivation to develop vacant parcels since the cost of holding these properties is relatively low and a potential windfall from rising land values over time is relatively high.

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Finally, as part of the 2011 Budget Act, the California Legislature approved the dissolution of the state's 400+ redevelopment agencies. California is now one of a small number of U.S. states without tax increment financing to support urban infill development.

Reduced Support and Insufficient Progress in Building Affordable Housing

In addition to the regulatory and tax policy challenges cited above, recent years have seen major reductions in funding for affordable housing programs at both the state and federal levels. There has also been insufficient progress in the production of "naturally occurring" affordable housing — unsubsidized rental units that are affordable to low- and moderate-income households. This has severely affected the region's low- and moderate-income households by further reducing the supply of new and existing affordable housing, whether government-subsidized or market-rate, especially given median wage deflation from 2000–2013.

Since 2000, for example, there have been cuts of over 50 percent to federal affordable housing programs, and most remaining federal funds go to rehabilitation rather than increasing supply. At the state level, the aforementioned dissolution of redevelopment agencies eliminated a large source of funding for affordable housing, including a loss of more than $200 million for the Bay Area in 2011 alone, according to Enterprise Community Partners and the Non-Profit Housing Association of Northern California.

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The production of housing affordable to low- and moderate-income households has lagged behind production of housing affordable to higher-income households, with the most significant shortfall occurring in the moderate or middle income category — housing that is typically produced by the market without subsidy in most metro regions. From 1999 to 2014, the Bay Area issued permits for only about 35 percent of the units required to meet the needs of vulnerable populations such as low-income families, seniors and the homeless. This left over 100,000 needed affordable housing units unbuilt.

At the same time, much of the older housing stock that typically forms the backbone of "naturally occurring" affordable housing is located in higher density, transit rich areas that have experienced gentrification pressures and the loss of affordable units, further exacerbating the challenges of sluggish affordable housing production. Moving forward, the annual funding needed to build an adequate supply of low- and moderate-income housing through cost-restricted units rather than through market mechanisms is estimated at $1.4 billion annually, according to the Association of Bay Area Governments (ABAG).

Impacts on the Region's Present and Future

The housing crisis raises major concerns about negative impacts to the region. Affordability, a primary concern of Bay Area residents, continues to be a major challenge. This in turn poses risks to the Bay Area's socioeconomic diversity, transportation system, environmental goals and robust economy.

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Housing Affordability

Housing affordability has significantly worsened over time. Home prices are at record levels in some counties and near record levels in the rest. Rent payments have almost doubled in real dollars since the 1970s. While median wages are close to the top nationally, the Bay Area has by far the highest median home sale prices of any major metro region in the country, as shown in Figure 1.3. The region is now also home to three of the five most expensive rental markets in the nation, according to Zillow.

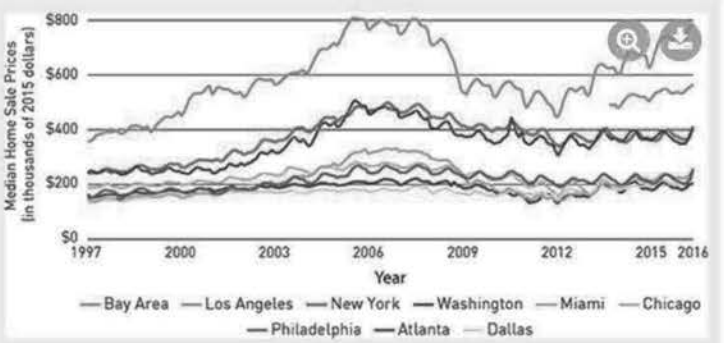

FIGURE 1.3 Median home sale prices by metro area from 1997 to 2016.
Over the last 20 years the Bay Area has seen one of the "spikiest" real estate markets in the country, with bigger booms and busts than other large metros. In particular, prices have risen much faster in the Bay Area coming out of the recent Great Recession.
Source: Vital Signs; Zillow, 1997–2016

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The prospects and benefits of home ownership are simply out of reach for many Bay Area households. Amid the affluence and new wealth generated in the post-recession era, approximately 24 percent of the Bay Area's population lives below 200 percent of the federal poverty level, and the vast majority of households with annual incomes below $50,000 experience an excessive housing cost burden, as shown in Figure 1.4.

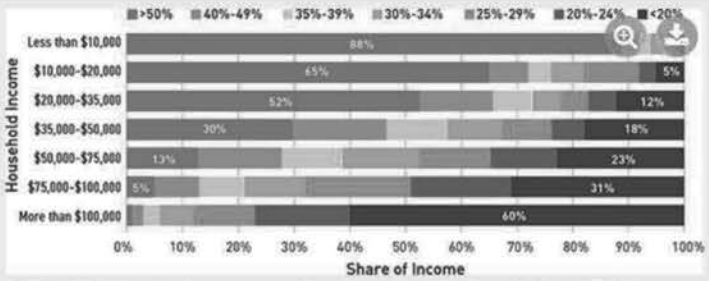
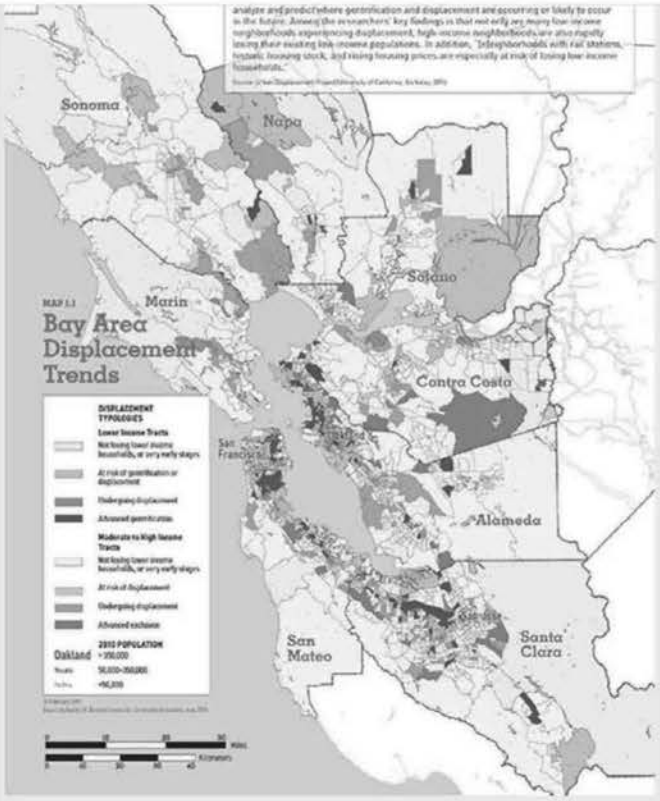


FIGURE 1.4 Share of income spent on housing by Bay Area households in 2015, segmented by income level.
A significant majority of households earning less than $35,000 in the Bay Area spent more than 50 percent of their household income on housing in 2015.
Source: Vital Signs; U.S. Census Bureau/American Community Survey, 2015

Displacement and Quality of Life Concerns

While the cost of housing has increased significantly for both owner and renter households, renters are also at higher risk for displacement during periods of growth and expansion. Currently there are hundreds of thousands of lower-income households at risk of displacement in the Bay Area, with the majority of them living in San Francisco, Santa Clara and Alameda counties.

The lack of adequate tenant protections — or availability of subsidized or "naturally affordable" market-rate units in neighborhoods with quality transit service and other amenities — has accelerated the displacement of lower-income residents and even many businesses from the region's core urban areas. As shown in Map 1.1, displacement is no longer just a San Francisco problem, but a region-wide challenge.



MAP 1.1 Bay Area displacement trends.
Scholars at UC Berkeley looked at regional housing, income and other demographic data to analyze and predict where gentrification and displacement are occurring or likely to occur in the future. Among the researchers' key findings is that not only are many low-income neighborhoods experiencing displacement, high-income neighborhoods are also rapidly losing their existing low-income populations. In addition, "[n]eighborhoods with rail stations, historic housing stock, and rising housing prices are especially at risk of losing low-income households."
Source: Urban Displacement Project/University of California, Berkeley, 2016

Given insufficient support for affordable housing, many individuals who perform important but lower- paying jobs face either substandard or overcrowded and unhealthy housing; costly, long-distance work commutes; or sometimes even homelessness — the most severe expression of the region's housing shortage. Rising prices in the region's core have driven many lower-income households to outlying jurisdictions farther away from jobs, transit and amenities, even as low- and middle-wage job growth has been concentrated in three counties: San Francisco, San Mateo and Santa Clara. This shift contributes to increased development pressures on open space and agricultural lands, more pollution from passenger vehicles, adverse health impacts, higher transportation costs, and greater levels of highway and transit congestion.

Attachment 6

Appendix O-SM

SPUR REGIONAL STRATEGY

BRIEFING PAPER
MARCH 2020

What It Will Really Take to Create an Affordable Bay Area

How much housing does the region need to build to prevent income inequality from getting worse?

This report is one in a series of publications that lay the groundwork for the SPUR Regional Strategy.

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Sarah Karlinsky, Senior Advisor

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Contents

Introduction

The San Francisco Bay Area continues to be one of the country's least affordable housing markets. The region's lack of housing and limited affordability have significant ramifications for the people who currently live here, the people who once lived here but have been forced to move elsewhere and the people who used to be housed but now live on the street.[1] These housing pressures are remaking the region's diversity,[2] culture, economy and environment. Limited housing affordability and its impacts across California have dominated the state legislative conversation, resulting in groundbreaking state legislation that has the potential, for the first time in decades, to move the needle on addressing the housing crisis.

And yet much more needs to be done if the Bay Area is going to become a region that builds enough housing for all of the people who want to live here — and for the children of those people to be able to stay here when they grow up.

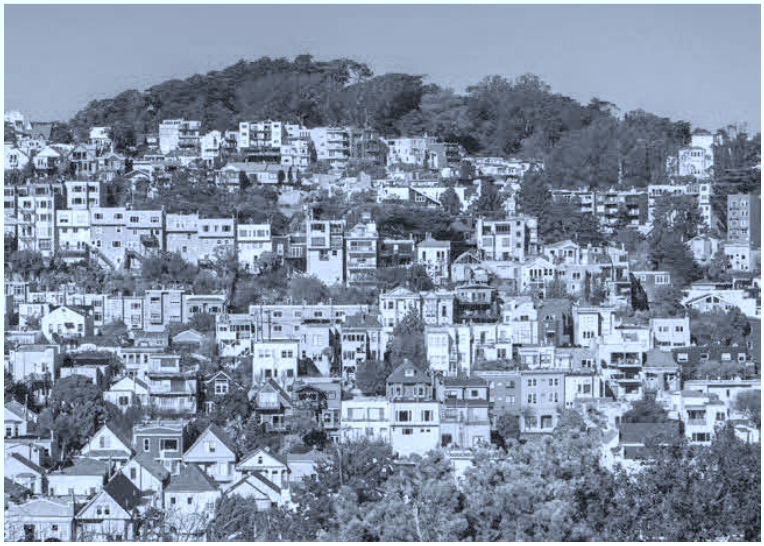
SPUR is developing a Regional Strategy to envision what the Bay Area could be like 50 years from now if the region is successful in addressing the housing crisis, making great places that support a high quality of life, creating a transit system that works and combating climate change so that future generations can continue to comfortably inhabit this planet.

As part of this effort, we are delving into the causes, nature and sheer size of the housing crisis to make sure the solutions we propose are far-reaching enough to address the scale of the problem. We are testing our proposed solutions for "enough-ness" so that the region's policies don't just continue tinkering around the edges but, when taken together, actually solve the problem. It won't be easy to do. But it is SPUR's hope that by laying out the challenge in all of its complexity, we can help local, regional and state government adopt solutions that will ultimately have a chance of working.

1 Homelessness in San Francisco has risen 30% from 2017. Applied Survey Research, *San Francisco Homeless Count and Survey Comprehensive Report*, 2019, http://hsh.sfgov.org/wp-content/uploads/FINAL-PIT-Report-2019-San-Francisco.pdf

2 The University of California at Berkeley's Urban Displacement Project and the California Housing Partnership, *Rising Housing Costs and Resegregation in the San Francisco Bay Area,* 2019, https://www.urbandisplacement.org/sites/default/files/images/bay_area_re-segregation_rising_housing_costs_report_2019.pdf

Photos by Sergio Ruiz.



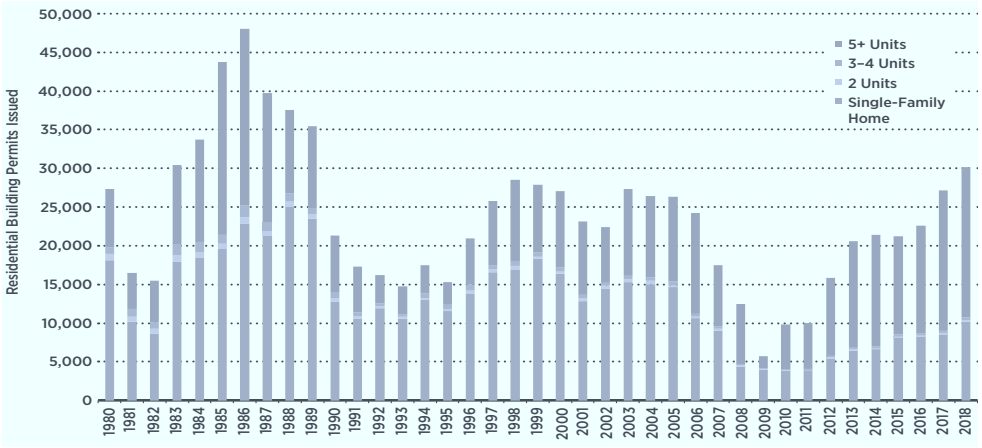
What caused the housing crisis?

Two interrelated factors drive the housing crisis: a failure to build enough housing for all of the people who live and work here, and increases in both incomes and the number of people with higher incomes. SPUR has been working with The Concord Group, a real estate economics firm, to understand both trends.

Driver 1:
The Bay Area has not built enough housing.

Although demand for housing has increased dramatically over the years — most notably due to a rapidly expanding regional economy — the amount of housing produced in the nine-county Bay Area has decreased in recent decades. Through the 1980s, the region produced a significant amount of housing on an annual basis, though much of it was built in lower-density development patterns, including single-family housing, master planned communities and garden-style apartments. In recent years, housing has increasingly been concentrated in fewer locations at higher densities,[3] and the number of units produced annually has decreased. This trend has multiple causes. The region has done a better job of protecting open space and seeking to concentrate growth in places that have already experienced development. Meanwhile, local governments have added more requirements to the development process, making it harder and harder to build housing in already-developed areas. More recently, real estate investors concerned by the Great Recession (and the subprime lending that exacerbated it) moved capital toward less risky investments in high-end urban development.

FIGURE 1
Residential Building Permits Issued in the Bay Area, 1980–2018



Source: The Concord Group analysis of the U.S. Census Bureau's Building Permits Survey, https://socds.huduser.gov/permits

3 Romem, Issi, "America's New Metropolitan Landscape: Pockets of Dense Construction in a Dormant Suburban Interior," BuildZoom, February 1, 2018, https://www.buildzoom.com/blog/pockets-of-dense-construction-in-a-dormant-suburban-interior

While housing production declined, the number of jobs rose significantly. From 2011 to 2017, the region added 658,000 jobs and 140,000 housing units, or 4.7 jobs for every housing unit. In many parts of the region, particularly those areas closest to the explosion in tech jobs, the ratio was significantly higher.

FIGURE 2

Ratio of Jobs to Housing in Bay Area Counties

COUNTY	JOBS TO HOUSING RATIO 2004–2008	JOBS TO HOUSING RATIO 2011–2017
San Francisco County	4.27	6.26
Alameda County	-0.05	3.86
Contra Costa County	0.66	3.04
San Mateo County	0.91	8.14
Santa Clara County	1.71	4.15
Marin County	0.27	4.82
Napa County	1.88	8.41
Sonoma County	-0.63	5.15
Solano County	0.55	4.27

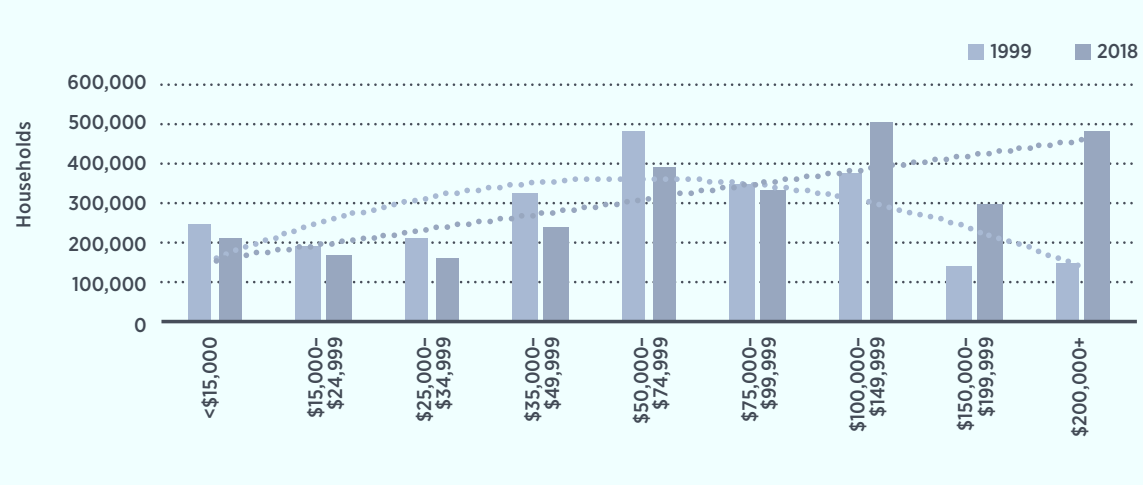
The region's new jobs have attracted new residents. Since 2000, the Bay Area's population has increased by 15%, or roughly 1 million people. Adding more people without sufficiently expanding the amount of available housing has exacerbated the housing shortage and driven up the cost of housing.

Source: Housing permit data from the Department of Housing and Urban Development, https://socds.huduser.gov/permits; primary private job data from the U.S. Census, https://onthemap.ces.census.gov.

Driver 2:
The Bay Area is becoming richer.

The Bay Area is becoming increasingly wealthy. Just 20 years ago, incomes were distributed in a bell curve, meaning that more middle-income people lived in the region than either low-income people or wealthy people. Over the past two decades, that distribution has shifted to favor wealthier households. Since 1999, the Bay Area has seen a decrease of 300,000 households making under $100,000 and an increase of 625,000 households making over $100,000.[4]

FIGURE 3
Change in Bay Area Household Income Distribution, 1999–2018



Previous SPUR research provides two explanations for the shifts in household income.[5] The first is that wages in high-wage occupations have grown much faster than wages in low- and middle-wage occupations. The second reason is that middle-wage jobs did not grow during the past decade and are projected to grow more slowly than high- and low-wage jobs in the future. Some other reasons for shifts in income could include changes in household formation (when people marry or move in with roommates or family members) and wage increases over time as some people have moved up the job ladder. The net result is that as more higher-income households compete for a limited number of available homes on the market, they bid up rents and purchase prices across the board. This particularly affects new entrants into the housing market, making finding a first-time home expensive — if not impossible — for everyone but the high earners.

4 Analysis by the Concord Group. Note that income figures are not inflation-adjusted because typical inflation adjustments use housing as a major component of ongoing Consumer Price Index calculations. If income is inflation-adjusted to include housing costs, the enormous impact that housing has on income distribution would be eliminated from the analysis.

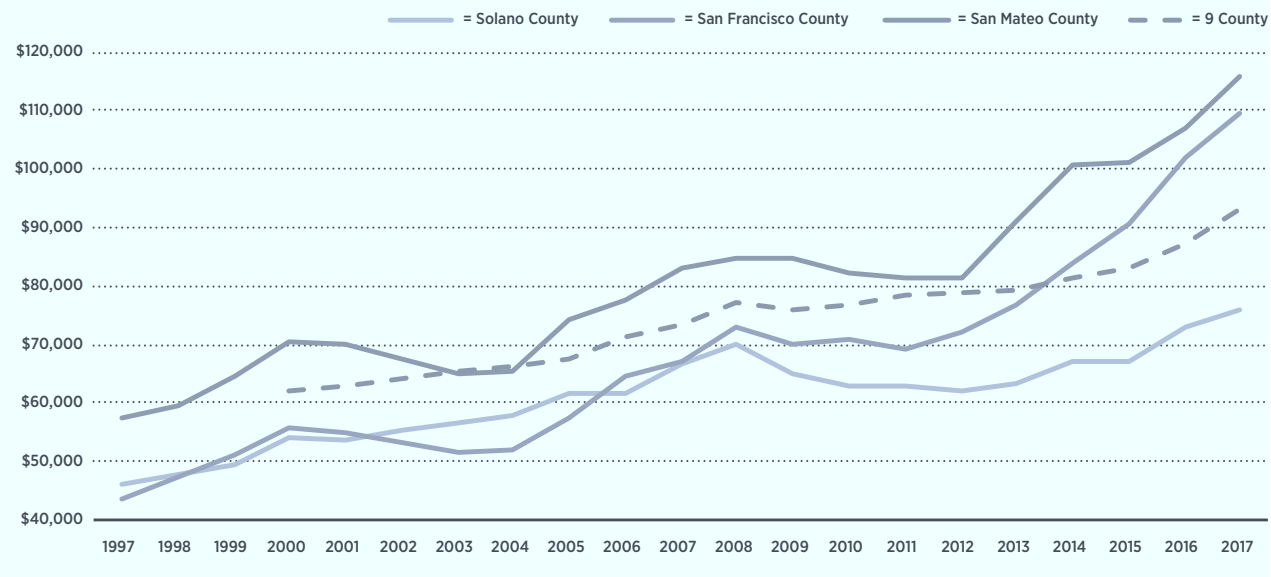
5 Levy, Stephen, "How the Retirement Wave Will Impact Bay Area Jobs and Workers," SPUR, 2019, https://www.spur.org/news/2019-01-17/how-retirement-wave-will-impact-bay-area-jobs-and-workers

Source: The Concord Group analysis of ArcGIS income distribution data and U.S. Census American Community Survey income distribution data, https://factfinder.census.gov (Note: This website will be taken off line on March 31, 2020, and will be replaced by https://data.census.gov/).

The change in the Bay Area's income distribution can be summarized by a significant shift in median income: The median Bay Area household became 50% wealthier over the last 20 years, with median income rising from $60,000 to $90,000.[6]

FIGURE 4
Change in Bay Area Median Household Income, 1997–2016

Median household income has grown significantly in the Bay Area over the last 20 years. San Mateo, San Francisco and Solano counties are included to show the range of distribution across the region.



These shifts have enormous implications not just for the Bay Area but for the 21-county Northern California megaregion, a geography that stretches from Santa Cruz to Sacramento. As more people move out of the Bay Area to seek affordable housing, the income distribution of the megaregion has also shifted, albeit less dramatically in the 12 outer-region counties than in the nine-county Bay Area.[7] The 12 outer counties — Mendocino, Lake, Colusa, Yolo, Sacramento, Placer, San Joaquin, Stanislaus, Merced, San Benito, Monterey and Santa Cruz — saw growth in households making $50,000 to $75,000 but still saw losses in households making under $50,000.

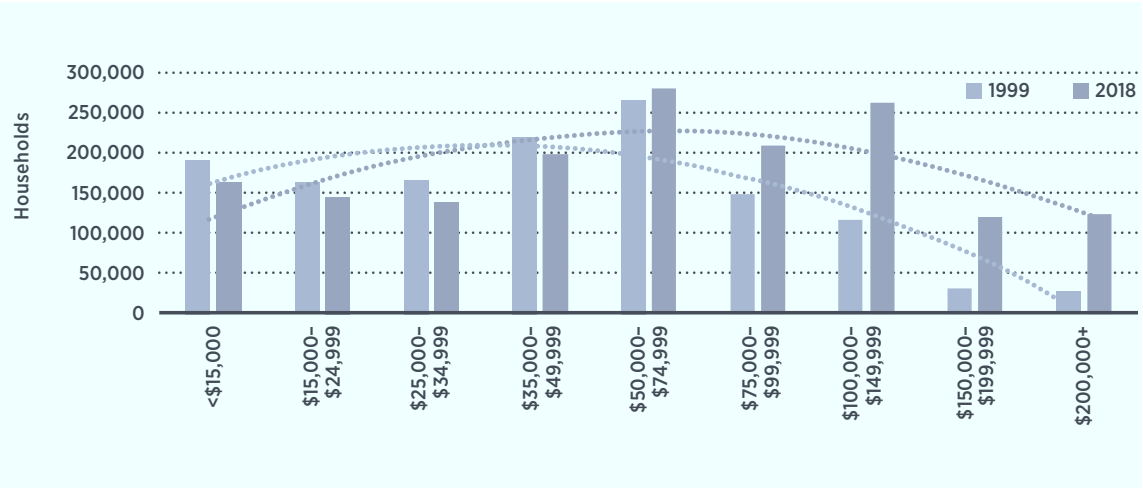
6 Analysis by the Concord Group. Note that income figures are not inflation-adjusted, as explained in footnote 4.

7 Analysis by the Concord Group. Note that income figures are not inflation-adjusted, as explained in footnote 4.

Source: The Concord Group analysis of Federal Reserve Bank of St. Louis (FRED) median household income, https://fred.stlouisfed.org. Source: The Concord Group analysis of ArcGIS income distribution data and U.S. Census American Community Survey income distribution data, https://factfinder.census.gov (Note: This website will be taken off line on March 31, 2020, and will be replaced by https://data.census.gov/)

FIGURE 5

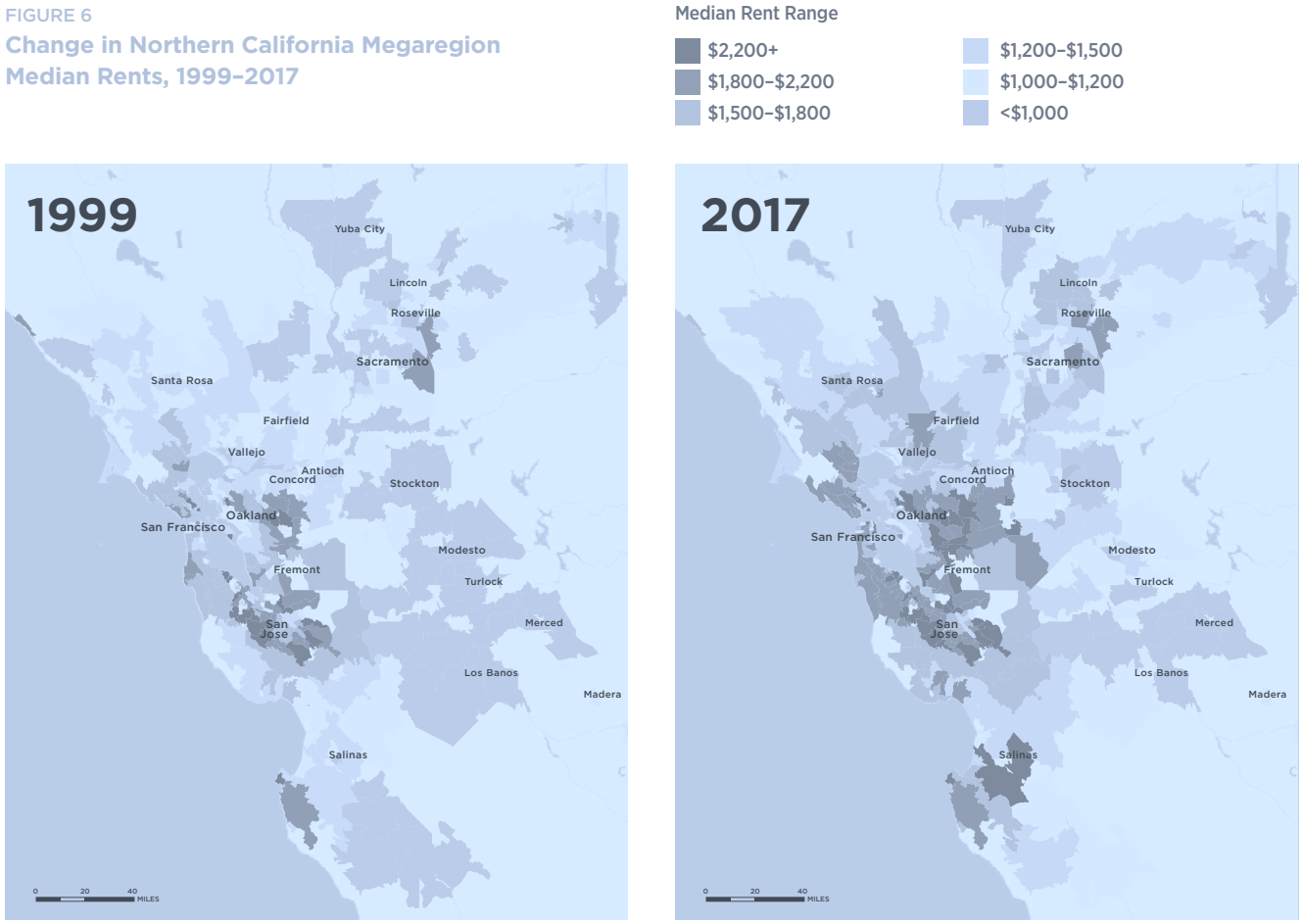
Change in Outer-Region Household Income Distribution, 1999–2018



Unsurprisingly, during this same time period, housing prices in the megaregion have increased as well, although the starkest increases have occurred mainly within the nine-county Bay Area.

FIGURE 6

Change in Northern California Megaregion Median Rents, 1999–2017



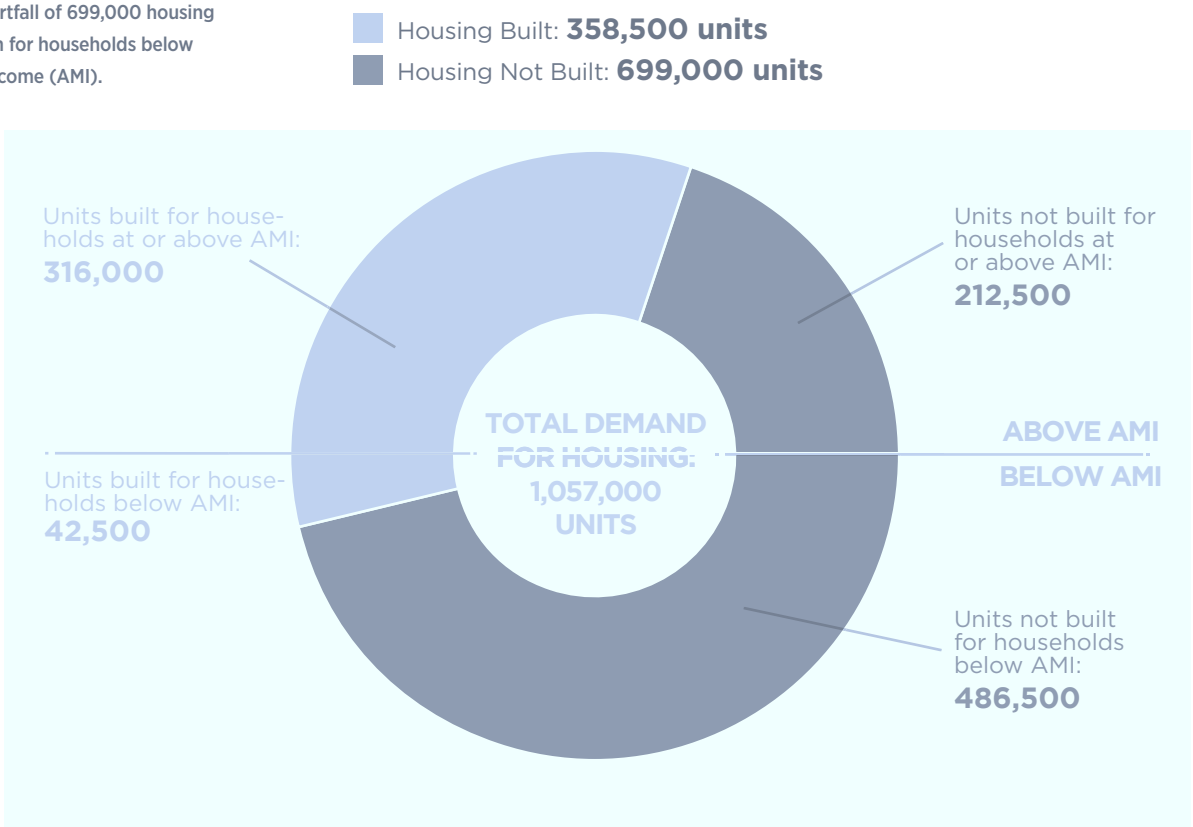
How much housing should the Bay Area have built?

Escalating housing unaffordability has been a contributing factor to massive income distribution changes since 1999, increasing the number of evictions, displacing historic residents of Bay Area communities and threatening the health and growth of the region. How much housing would the Bay Area have needed to build over the last 20 years to prevent income inequality from getting worse? Working with the Concord Group, SPUR sought to answer this question.

We found that the Bay Area saw the construction of 358,500 total housing units over a time period where typical long-term regional growth patterns would have called for a little over 1 million units. This created a shortfall of 699,000 housing units. The market largely served those able to pay the most for housing. Roughly 316,000 of the newly built units were rented or sold to those with higher incomes and/or higher levels of wealth, who were able to absorb the rapidly rising housing costs. At the same time, affordable housing developers built roughly 42,500 units of permanently affordable subsidized housing — not nearly enough to satisfy the demand for housing at the lowest end of the price spectrum. The missing 699,000 units fall into two categories: 486,500 units of housing needed for those below the median income and 212,500 units of housing needed for those above the median income, meaning that the demand for affordable and middle-income housing went largely unmet.

FIGURE 7
Historical Housing Shortfall
Bay Area Housing Demand, 2000–2018

How much housing would the Bay Area have needed to build over the last 20 years to prevent income inequality from getting worse? Analysis by SPUR and the Concord Group shows a shortfall of 699,000 housing units, most of them for households below the area median income (AMI).



Data visualization by Justin Fung. Source: See appendix for sources and methodology.

What was the impact of this failure to produce enough housing? Where did all of those people go? As SPUR has written about previously,[8] some moved to other places, some decided to stay and pay more of their income toward rent and others never showed up in the first place: Individuals who may have contemplated moving to the Bay Area decided to go elsewhere due to the region's high housing costs. Of those who have stayed, some live in overcrowded housing, doubling up with friends and family, or in units that are ill-suited to their family size. Others have not left their childhood homes, delaying adulthood. Of those who have left the Bay Area, some have moved to outer-county cities such as Sacramento in search of cheaper housing,[9] enduring lengthy super-commutes to keep their Bay Area jobs. Others have left Northern California altogether for more affordable metro areas, like Denver or Austin. Most distressing of all, many have lost all forms of housing, leading to the region's current homelessness crisis.

8 Terplan, Egon, "How Much Housing Should the Bay Area Have Built to Avoid the Current Housing Crisis?," SPUR, February 21, 2019, https://www.spur.org/news/2019-02-21/how-much-housing-should-bay-area-have-built-avoid-current-housing-crisis

9 Kneebone, Elizabeth and Issi Romem, "Disparity in Departure: Who Leaves the Bay Area and Where Do They Go?," Buildzoom and Terner Center for Housing Innovation, http://ternercenter.berkeley.edu/uploads/Disparity_in_Departure.pdf

How much housing does the Bay Area need to build for the future?

We also investigated how much and what type of housing the region should produce to keep up with future demand. More housing will be needed as the region's children grow up and create families of their own and as the economy continues to evolve, adding new workers in the decades to come. Accounting for growing demand is particularly important in stemming the flow of lower- and middle-income households from the region.

It's not possible to know how much the region's population will grow over the next 50 years, but data analysis can offer helpful projections. For this investigation, our partners at the Center for Continuing Study of the California Economy estimated a high population growth target and a low population growth target.[10] The Concord Group then modeled what those targets mean for housing demand. Using the high growth projection (one that includes more aggressive assumptions regarding levels of immigration and job growth), SPUR estimates that the Bay Area will need a minimum of 1.5 million new units between now and 2070 both to keep up with population growth and to stop the current trend of losing low- and moderate-income households as the region gains wealthier households.

If we include the existing housing shortfall — the 699,000 units the region should have built over the last 20 years but didn't — we estimate that the Bay Area needs to produce a minimum of 2.2 million units by 2070, or roughly 45,000 units per year (see Figure 9). We believe it is important to include the shortfall, as current residents of the Bay Area are already experiencing the impacts of the region's failure to deliver a sufficient amount of housing: high housing costs, overcrowding and homelessness. As we have shown, the region's inability to deliver a sufficient amount of housing at all income levels has led to a loss of lower-income households. By addressing the shortfall, the region could ameliorate some of these negative impacts.

SPUR's housing target of 2.2 million units (45,000 per year) is somewhat higher than the regional target developed by CASA (the Committee to House the Bay Area) of 35,000 units per year.[11] McKinsey estimates that California needs to produce a minimum of 3.5 million homes statewide to meet a backlog demand of 2 million homes plus a growth demand for 1.5 million homes by 2025.[12] The Bay Area's housing growth target from 2015 to 2023, set at the state level through the Regional Housing Needs Allocation (RHNA) process, shows a need for 188,000 housing units over an eight-year period, or roughly 23,500 units per year. SPUR is recommending housing growth targets that are almost double the RHNA estimates and slightly more than double the region's annual production from 2000 to 2018.

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10 The Center for Continuing Study of the California Economy provided SPUR with population and job projections as detailed in its report *High and Low Projections of Jobs and Population for the Bay Area to 2070 — Projection Framework, Specific Assumptions and Results,* https://www.spur.org/sites/default/files/wysiwyg/CCSCE_High_and_Low_Projections_of_Jobs_and_Population_for_the_Bay_Area_to_2070-Projection_Framework_Assumptions_and_Results.pdf
The report included a high growth target and a low growth target based on national projections for jobs and population, as well as assumptions about immigration, growth in various economic sectors and the share of the population and job growth that the Bay Area will attract. SPUR chose to base its analysis on the high growth projection due to the following factors. First, it is unknown how rapidly the Bay Area's population will grow, but it most likely will reach both the low and the high targets eventually, if not within 50 years. Planning for the high growth target enables the region to fully meet future housing demand and plan for appropriate density. Second, if housing growth exceeds population growth targets, then housing prices might stabilize or decline for a period of time. Stabilizing prices would halt further displacement. While a period of declining prices might make existing owners worse off, it might help renters and assist many in the middle of the income distribution in buying a home for the first time. It is also easier to stop building when prices drop too quickly than it is to begin building rapidly when housing prices spike.

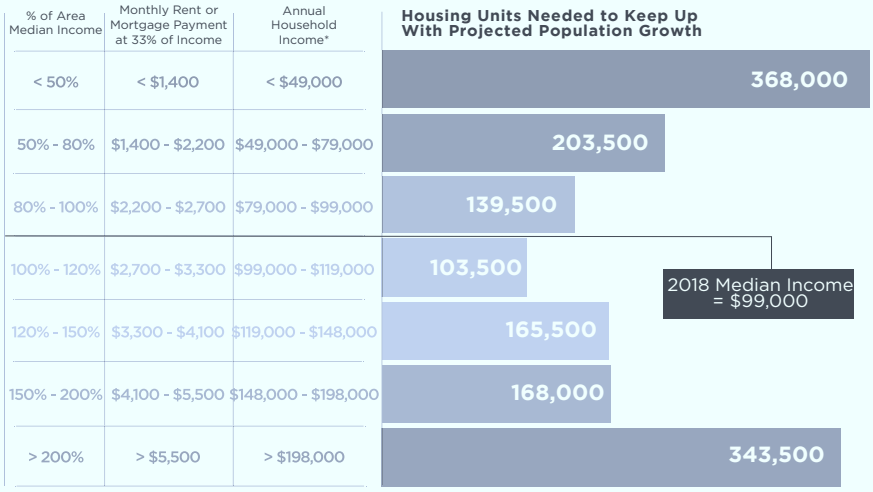
11 CASA, *CASA Compact: A 15-Year Emergency Policy Package to Confront the Housing Crisis in the San Francisco Bay Area,* January 2019, https://mtc.ca.gov/sites/default/files/CASA_Compact.pdf

12 McKinsey Global Institute, *A Tool Kit to Close California's Housing Gap: 3.5 Million Homes by 2025,* October 2016, https://www.mckinsey.com/~/media/McKinsey/Featured%20Insights/Urbanization/Closing%20Californias%20housing%20gap/Closing-Californias-housing-gap-Full-report.ashx

FIGURE 8

How Much Housing Does the Region Need to Build?

Projected Bay Area Housing Demand at All Income Levels, 2018–2070



The Concord Group's model (see Figure 8) looks at housing demand at various income levels based on population growth and seeks to answer the question: How much housing does the Bay Area need to add at different price levels to prevent income inequality from getting worse? It assumes that those who left the Bay Area over the last 20 years aren't coming back and focuses on making things better for the people who are here now and those who might come in the future.

It's important to note that the Concord Group's modeling doesn't answer the question: How much housing is needed to drive down housing prices? This question is notoriously challenging to answer accurately due to the confluence of many factors. To take just three issues: First, developers won't build new housing unless they are able to cover the costs of construction (labor, materials, land and financing). The ability to cover these costs is often dependent on rising housing prices. If housing prices drop below the level needed to build new units, private developers will stop building new housing and prices will rise. Second, if housing prices do decrease, then the Bay Area becomes a more desirable place to live for more people, which increases demand, and that increases prices. Lastly, driving housing prices down (rather than just flattening out price increases) can have negative impacts for homeowners, who can find themselves upside down on their mortgage if what they owe is more than the value of their home.

Because it's so hard to answer the question of how much housing the region would need to build to drive prices down, we are treating the answers that come from our modeling as minimum targets, knowing that the Bay Area would need to outproduce these numbers by some factor in order to reduce housing prices over time. It will be important to develop a housing delivery system that can change based on housing prices, allowing for more rapid housing production when prices spike. This system should also take into account the locations and types of housing needed to address demand.

The Bay Area will also need to adopt new policies to help develop housing for people at different incomes. The region will still need to produce a significant amount of market-rate housing — a minimum of 343,500 units for households making more than 200% of the area median income. For those at 80% of the area median income and below, the region will need to produce a minimum of 571,500 units. And for those between 80% and 200% of the area median income, another 576,500 units will be needed.

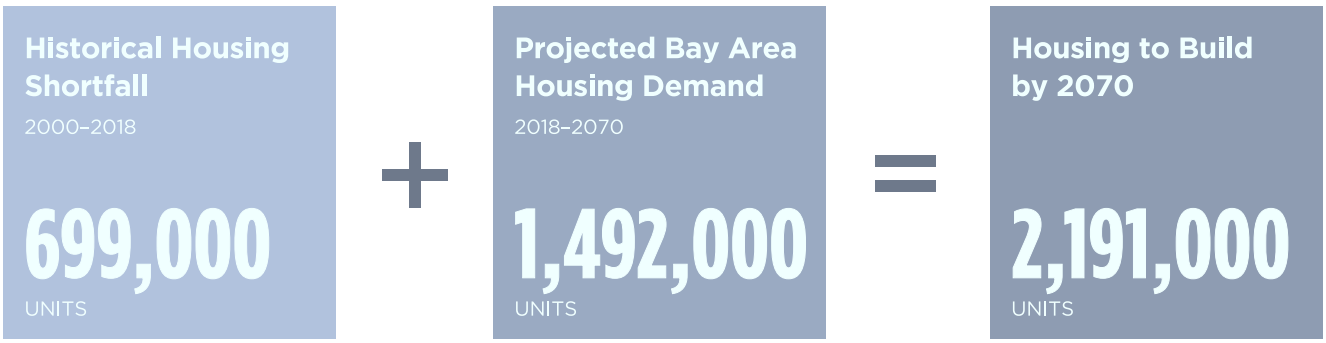
Data visualization by Justin Fung. Source: See appendix for sources and methodology.

FIGURE 9

SPUR's 2070 Housing Target

Total Bay Area Housing Demand, 2000-2070

By adding the existing housing shortfall from Figure 7 to the projected housing need in Figure 8, SPUR estimates that the Bay Area needs to produce almost 2.2 million new housing units by 2070, or about 45,000 units per year.



Source: See appendix for sources and methodology.

What will it take to get there?

SPUR is deep in the process of developing an agenda to address the Bay Area's affordable housing challenge at the scale of the problem. While housing unaffordability may seem like an impossible problem to surmount, there are steps that those of us who live and work in the Bay Area can take. We can double the amount of housing our cities build, change our taxation and governance structures to fund the housing we need and adopt policies to protect the people who live here now. But to make all of this happen requires political will. The following are SPUR's initial thoughts about what it will take to create an affordable region.

Treat housing as infrastructure.

Housing is not something that's nice to have, like a new pair of shoes or a vacation. It is critical to human beings to have a place to live, just as it is critical to have food to eat, clean water to drink and power to provide heat in the winter. When we need new water pipes to ensure regional access to clean water, government doesn't just change the zoning code to allow for the new pipes and wait for the private sector to build them. Government develops the plan for the new water pipes, the public funds their construction and the government hires private contractors to build them.

If we treated housing as infrastructure, the same way we treat roads and water delivery as infrastructure, what in our housing delivery system would change? For starters, it might not be enough to rely solely on the private market to provide enough housing. Privately financed development in the Bay Area requires the careful alignment of a variety of factors: a local jurisdiction that will permit enough housing to be built, land prices low enough for the developer to recoup the cost over time, access to sufficient private lending at a low-enough rate to finance the construction, a workforce available to build the housing — and rising housing prices to pay for all of the above. This system of financing often means that housing can only be built when housing prices are escalating. When the market is down, housing production slows to a trickle — or sometimes stops altogether.

What if we rethought some aspects of this housing delivery system in order to achieve different objectives? For example, what if we could use public financing to build housing, particularly affordable and middle-income housing, at the bottom of the market (when land is cheaper and labor is more available) rather than at the top of the market? Being able to deliver housing at the low end of the market would have the added benefit of providing construction jobs throughout the market cycle, making them more secure over time.

What if there were other ways the public sector could provide readily available, lower-cost capital to finance the creation of middle-income housing — in ways that didn't cannibalize funding for more deeply affordable housing? And what if we were able to squeeze risk out of the development process by ensuring the faster, clearer permitting of housing so that developers functioned more like contractors? If their role was more focused on building the housing rather than negotiating a complicated and risky entitlement process, could they bring housing to market at more affordable price points?

It is not impossible to devise a different housing system than the one we have today. Other countries have made it a societal priority to build enough housing for everyone.[13] We can learn from them.

13 For example, in Vienna, roughly half of the city's housing stock is highly regulated, affordable "social housing." See: Holeywell, Ryan, "Vienna Offers Affordable *and* Luxurious Housing," *Governing*, February 2013, https://www.governing.com/topics/health-human-services/gov-affordable-luxurious-housing-in-vienna.html

Make it less expensive to build housing.

Regardless of how housing is financed, one thing is clear: We need to build significantly more of it — at all price points — if we're going to get ahead of the housing crisis. The region hasn't produced 45,000 units per year since the 1980s, when roughly half of new housing came in the form of sprawl-style single-family housing development, a less expensive building type to construct. Apartments, particularly those in taller buildings, are more complicated to build, so labor costs are higher; they take longer to build, so developers need to pay land costs, such as loan payments, property taxes, insurance and security, for a longer period of time before being able to rent or sell homes; and the construction materials, such as steel or mass timber, are more expensive. In order to produce housing at the scale needed, in denser development patterns that preserve the environment, all of the cost components of housing need to be examined: land prices, financing, construction, building permits, planning and building code requirements, taxes and fees. There can be no sacred cows: We need to examine every aspect of the housing delivery system to see how we can produce enough housing at the scale needed.

Change the governance structure to support housing construction.

Our current system of governance is not up to the challenge of solving our current housing crisis. Each city is responsible for deciding how much housing will be built within its boundaries and in which neighborhoods. The ability to determine zoning at the local level is called "home rule," a power enshrined in our state governance structure. Although the state sets a goal for how much housing each region should produce, and then regional agencies provide each city with a target, there is almost no consequence for failing to meet these goals. So each city has the power to engage in zoning practices that exclude middle- and low-income residents, such as allowing single-family homes only and requiring large lot sizes and plentiful parking. The requirements squeeze out apartment buildings, townhomes, duplexes and other more affordable housing types. Home rule creates a no-win situation for local politicians who support housing. They can approve the housing that is needed and face the anger of constituents who don't want more housing in their neighborhoods, or they can oppose the housing and make the housing crisis worse. The cumulative result of each city deciding how much housing to allow within its boundaries is the current statewide housing shortage.

State government has a very important role to play in addressing the housing crisis because it can create new rules around what gets built where. Senate Bill 50, a proposed bill that would have prevented cities from blocking housing near transit and in areas with good jobs and good schools, is one example of what state legislators can do. State government can also create new sticks and carrots to discourage or encourage certain behaviors. It can diminish local control for jurisdictions that don't help to address the housing crisis and offer new funding for jurisdictions that work to build the housing needed. It can also reform existing laws, like the California Environmental Quality Act, that make it harder to build housing in already-developed areas.

Regional institutions likewise can play an increased role. The newly created Bay Area Housing Finance Authority has certain powers to help create funding for affordable housing. Such an agency could eventually have other powers, including the power to land-bank parcels for future housing development and assemble land for housing construction.

Ensure that low-income people can stay in their current homes while new housing is being built.

If we are really to solve the housing crisis, we need to find ways to enable low-income Bay Area residents to remain in their homes. Roughly 282,000 low-income families in the Bay Area live in housing that is affordable to them but is currently at risk of cost escalation because those units are not subsidized or price-restricted.[14] And of course, many more housing units are occupied by low-income households at unaffordable rents, causing overcrowding and financial strain. As rents continue to rise, vulnerable families are displaced from the Bay Area.

Recent research has brought to light more information about the patterns and ramifications of displacement.[15] Long-standing theories that new housing development causes gentrification and displacement are giving way to a more nuanced understanding of this complicated dynamic. In most cases, new market-rate housing follows, rather than causes, gentrification. Developers seek to purchase land and build new units when and where prices are already on the upswing — that's when the odds are good that they can recoup their costs through higher rents or sale prices. In neighborhoods already experiencing gentrification, the development of new market-rate housing can speed up the process by further signaling that a neighborhood is a desirable place for investment. Once those new buildings are built and occupied, gentrification can intensify, adding to displacement pressures.

How do we address displacement? The solution to this problem is not to stop building market-rate housing. Without a sufficient amount of market-rate housing, high-income workers will continue to outcompete everyone else and shift housing prices for the entire region. Building more housing for market-rate buyers can reduce their impact on the housing market as a whole and help limit rapid increases in price.

But building more housing is only part of the solution. We also need to find ways to combat displacement by enabling low-income residents of the Bay Area to remain in their homes.

Finding ways to strengthen community ownership of land, taking existing housing out of the speculative market and making it permanently affordable, and developing other tools to stabilize neighborhoods are of critical importance in addressing the housing crisis. Helping low- and moderate-income families find a path to homeownership (without being swept up in the next foreclosure crisis) is another way to engage the problem. Thoughtful interventions that protect renters, like California's recent anti-price-gouging law,[16] are also needed.

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14 Analysis completed by the California Housing Partnership and Enterprise Community Partners. This number represents an estimate of the total number of unrestricted units offered at rents affordable to low-income (< 80% Area Median Income [AMI)]) households *and* occupied by either an extremely low-income (< 30% AMI), very low-income (< 50% AMI) or low-income (< 80% AMI) household. While this number accounts for most deed-restricted affordable housing, due to data limitations the methodology does not incorporate public housing or locally restricted housing, such as units made affordable through inclusionary zoning. It also excludes housing occupied by tenants using a Housing Choice Voucher, since the units themselves are technically still subject to changes in the market and landlord participation is voluntary.

15 The Urban Displacement Project at UC Berkeley has developed substantial tools to understand displacement pressures in the Bay Area. See: https://www.urbandisplacement.org/

16 Chandler, Jenna, "Here's How California's Rent Control Law Works," *Curbed,* January 6, 2020, https://la.curbed.com/2019/9/24/20868937/california-rent-control-law-bill

Add significant new resources for affordable housing and find ways to build a lot more of it.

Stabilizing existing housing for low-income people and building the amount of affordable housing the Bay Area needs over the next 50 years will require a significant realignment of resources. It is important to note that the past 50 years of housing policy have predominately benefited one segment of the population: property owners, in particular white homeowners, who were not harmed by historic redlining policies. These laws systematically denied communities of color low-cost mortgages and other resources needed to build wealth. As a result of these disparities, white families have greater homeownership rates and have been able to transfer far more wealth over generations than families of color.[17] The largest housing program in the country has been the mortgage interest income tax deduction, which benefits only those homeowners with enough income to qualify for a deduction. In 2017, the cost of this program was $71 billion. While the Trump tax plan of 2017 has reduced the value of the mortgage interest income tax deduction to an estimated $41 billion,[18] none of the cost savings was redistributed to affordable housing programs.

California needs to consider significant new ways to fund affordable housing. It's time to reexamine Proposition 13, the 1978 law that caps property tax increases for both businesses and homeowners. Prop. 13 limits the taxable value of property to its last sale price, even if that sale was decades ago. This has dramatically curbed the amount of funding available for all public goods in California, including affordable housing. We need to find ways as a society to pay for affordable housing, not just through fees on new housing construction or large bond issues that require passage every few years, but through ongoing, stable, large-scale programs that are sized to address the need.

Affordable housing faces the same problems as market-rate housing. Construction costs are the same no matter if the housing is for low-income or high-income residents. The entitlements process is uncertain, as affordable housing must win approvals in jurisdictions that may not want housing for low-income families. And affordable housing often faces even more scrutiny than market-rate housing during the permitting process. There is also significant uncertainty in financing, as affordable housing developers must pull together a dizzying array of funding sources in order to make projects financially viable. This process has led to skyrocketing development costs. We need to find ways to reduce cost and risk in the affordable housing development process so we can build more housing more quickly at a reasonable cost.

Build housing for the "missing middle."

SPUR's research has found that the private real estate market addresses the needs of the highest-income households. These households outcompete and set prices for everyone else due to the limited supply of housing. And while the prices they pay are at record highs, households in this category are not in fact paying a higher percentage of their income now than they have historically. At the same time, affordable housing developers, subsidized by public funding, have made a valiant effort to build permanently affordable housing for the region's

17 Traub, Amy et al., *The Racial Wealth Gap: Why Policy Matters,* Demos, June 21, 2016, https://www.demos.org/research/racial-wealth-gap-why-policy-matters

18 Tax Policy Center, "Key Elements of the U.S. Tax System," *The Tax Policy Center's Briefing Book,* https://www.taxpolicycenter.org/briefing-book/what-are-tax-benefits-homeownership

lowest-income households. But there is a significant part of the population that is not served by either the existing market or subsidized affordable housing programs: the "missing middle."

As mentioned above, SPUR estimates that over the next 50 years, in order to accommodate future growth, the Bay Area will need to build 576,500 units that are affordable to people making between 80% and 200% of the area median income. One part of the solution is to allow enough market-rate housing to be built to lower prices enough that eventually a larger percentage of middle-income people can participate in the housing market. But another part of the solution involves developing new programs and interventions that can reach middle-income households. Secondary units, smaller units that come without a parking space, mixed-income housing that uses the proceeds from market-rate units to subsidize middle-income units, and co-housing (where households collectively finance housing and some common spaces are shared)[19] all need to be examined as tools to address this portion of the market.

Change the cultural assumptions about housing.

Lastly and perhaps most importantly, we need to change the way we think about housing. The American Dream has always involved land ownership, from the Jeffersonian agrarian ideal[20] to the cultural elevation of the single-family home and the white picket fence. Yet other countries and cultures do not place homeownership on such a pedestal. Part of the cultural value of homeownership has to do with the role it plays in the United States as a primary mechanism of wealth generation and wealth transfer from one generation to the next. Another part has to do with our country's extraordinary lack of a social safety net relative to other developed countries. One's ability to retire and enjoy old age often hinges on property ownership. But the American conception of property rights has deeply negative consequences for renters. Unlike homeowners, most renters can't rely on being able to stay in their homes for the long term and aren't guaranteed stable housing costs.

If we are going to change our housing system in any meaningful way, we need to change our collective dream. What if we dreamed of a future where all families could afford housing and go to great schools? Where no one had to live in fear that the next illness or change of job could result in losing their home? Where commutes were short and pleasant and it was easy to get around by train, bus, biking or walking? What if there were ways to build assets for future generations that didn't involve owning a home? What if asset building were not a matter of life and death because our society took care of its people? What if homelessness were not tolerated and we found a way to house our most vulnerable populations?

Dreaming a new dream is the prerequisite for a better future. It's time for us to rise to the challenge.

19 Wang, Kristy and Benjamin Grant, "Could Germany's Co-Developed Urban Housing Be a Model for the Bay Area?," SPUR, September 21, 2017, https://www.spur.org/news/2017-09-21/could-germany-s-co-developed-urban-housing-be-model-bay-area

20 "Jeffersonian Ideology," *U.S. History Online Textbook,* http://www.ushistory.org/us/20b.asp

Appendix

Methodology to Determine "A Historical Housing Shortfall" (Figure 7) and "How Much Housing Does the Region Need to Build?" (Figure 8)

Figures 7 and 8 in this paper, "A Historical Housing Shortfall" and "How Much Housing Does the Region Need to Build?" were developed by The Concord Group (TCG) to illustrate demand for housing at each whole dollar of income and monthly housing cost, which means that the model reflects true demand for each individual income. For the model, TCG used data from Claritas's Spotlight, a syndicated data source that provides yearly demographic data for the United States. This model specifically used the household income distribution from the year 2018. Spotlight, like the U.S. Census, presents its household income distribution in ranges ($25,000 to $50,000, $50,000 to $75,000, etc.). In total, there are 10 delineated income ranges.

TCG made a set of assumptions that informed the model. First, that "housing affordability" would be defined as a household spending no more than 33% of its income on housing costs and that every household would demand housing at that percentage of their yearly income. TCG then quantified the units demanded at each household income range based on each household in that income range spending 33% of its income on housing. For example, households making under $49,000, or under 50% of the area median income, would have a maximum affordable housing cost of $1,400 per month. The equation to reach this figure is (Annual Income x Housing Burden [33%]) / 12 (months in a year).

Second, TCG assumed that households in the nine-county Bay Area would grow at a rate determined by the Center for the Continuing Study of the California Economy (CCSCE). CCSCE used two different growth scenarios: a high growth potential and a low growth potential for the nine-county Bay Area. The maximum growth scenario projected 1% growth through 2040, 1% growth from 2040 to 2050, 0.5% growth from 2050 to 2060, and 0.5% growth from 2060 to 2070. In total, the maximum growth scenario projected a need for roughly 1,492,000 units of housing in the nine-county Bay Area from 2018 to 2070. The low growth scenario projected 0.6% growth through 2040, 0.4% growth from 2040 to 2050, 0.3% growth from 2050 to 2060, and 0.3% growth from 2060 to 2070. In total, the low growth scenario projected a need for roughly 748,000 units of housing in the nine-county Bay Area from 2018 to 2070.

Third, TCG assumed that the 2018 income distribution would remain constant. While TCG and SPUR do not expect income distribution to remain constant over the next 50 years due to a variety of factors, including wage growth, inflation, employment trends and other major economic events, TCG and SPUR wanted to look at the equitable housing needs independent of those factors and give a broad understanding, in today's dollars, of how much new housing would be needed at which income levels to ensure that housing would be at least as affordable as it is today.

Additional Methodology to Determine "A Historical Housing Shortfall" (Figure 7)

TGC developed a second model to quantify the total housing need for the nine-county Bay Area from 2000 to 2018 as a way to identify the unmet housing needs. In this model, TCG used a household annual growth rate of 2% (the average employment growth per year during this period for the nine-county Bay Area) to reflect what growth could have been for households in this period if sufficient housing had been available. TCG also used the original income distribution of the year 2000. Overall, TCG believes that about 1,057,000 units of housing should have been built during this time period. However, only 358,000 units were built.

The blue number at the lower left represents the affordable housing built in the nine-county Bay Area from 2000 to 2018. The data for affordable units came from the Department of Housing and Urban Development's (HUD's) Low Income Housing Tax Credits Database (https://lihtc.huduser.gov/), which tracks all affordable housing projects, including all projects funded through HUD, state service, local government, for-profit or nonprofit sponsors or any housing project with an income limit. TCG has assumed that, while affordable units can affect households making up to 80% of the area median income, these units served the lowest-earning households within the nine-county Bay Area. This blue number at the lower left represents the units built that are affordable to those making under 100% of the area median income.

The blue number at the top left of the figure represents the total market-rate units built in the nine-county Bay Area from 2000 to 2018. The data for built housing was taken from HUD's building permit website (https://socds.huduser.gov/permits/), with the assumption that all units from the years of 2000 through 2018 were built and operated at an occupancy of 93%. TCG has assumed that, while market-rate units can affect households making any level of income, these units most likely served the highest-wage earners in the nine-county Bay Area. This blue number at the top left represents the units built that are affordable to those making over 100% of the area median income.

The red number at the bottom of the figure represents the units that should have been built for households below the area median income but were not built. The red number at the upper right of the figure represents the units that should have been built for households above the median income but were not built. Overall, TCG has determined that the housing shortfall for the nine-county Bay Area from 2000 to 2018 was roughly 699,000 units.

SPUR

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SPUR

654 Mission Street
San Francisco, CA 94105
tel. 415.781.8726
info@spur.org

76 South First Street
San Jose, CA 95113
tel. 408.638.0083
infosj@spur.org

1544 Broadway
Oakland CA, 94612
tel. 510.827.1900
infooakland@spur.org

Attachment 7

J A R E D M. I K E D A

661 San Felipe St., Salinas, CA 93901 phone (831) 422-6292 e-mail: *jmikeda@earthlink.net*

Tuesday, September 08, 2020

Richard Drury
Lozeau Drury, LLP
410 12th Street, Suite 250
Oakland, CA 94607

RE: Comments on Draft Environmental Impact Report for Proposed UCSF Comprehensive Parnassus Heights Plan

Dear Mr. Drury,

At your request, I have reviewed the Draft Environmental Impact Report ("DEIR") for the proposed UCSF Comprehensive Parnassus Heights Plan ("Project")[1]. My review focused on the DEIR's treatment of visual and shadow impacts. My comments are attached as follows:

[1] See appendix for Jared Ikeda qualifications

VISUAL IMPACT

As described in the Comprehensive Parnassus Heights Plan Draft Environmental Impact Report, the proposed plan would provide 2.9 million gross square feet (gsf) of new building space. Currently, there is approximately 3.92 million gsf of building space. With full implementation of the CPHP, the total gross square feet would be approximately 5.97 million, including instruction, research, clinical and support space, housing and structured parking. This is a substantial increase in building area, mass and height, and will undoubtedly create significant visual impacts.

Within this plan a new 16 story hospital is to be constructed at the far east end of the campus and rise to 294 feet in height. As stated in the Draft EIR, this new hospital will be subject to a subsequent project specific environmental review as more details of this project becomes available. However, the Draft EIR states (*pg 4.1-23*) that development under the CPHP would not have a substantial adverse effect on scenic vistas. A significant effect on a scenic vista as defined in the DEIR, is a substantial block or degrade of scenic view from public vantage points. In review of this plan and DEIR, it is apparent that the proposed building plan and particularly the new 16 story hospital would have significant visual impacts. (*see figure 1 and 2*)

Fig 1 Existing view west from adjacent neighborhood

Fig 2 View west with proposed new hospital

By including this new hospital plan within this DEIR and concluding that it would not have a substantial adverse impact on a scenic vista, avoids discussion and possible mitigation measures in subsequent environmental review. This is not the intent of CEQA. Environmental review is a means to avoid or lessen adverse environmental effects at the outset, and by dismissing this issue at this time implies that it will not be address at a project level EIR in the future.

The topography of Mount Sutro and the green of the forested reserve are major elements that visually shape the adjacent neighborhoods as well as the overall city scape as seen from a distance. The views from publically accessible areas in and around the proposed UCSF Parnussus campus to these landmarks are of importance in establishing the quality of the environment here. One particularly significant local view point is the trail head near the intersection of Farnsworth Lane and Edgewood.

Public Trail Head at the end of Farnsworth Lane

The proximity and mass of the proposed new hospital will substantially impact this viewpoint. The 294 ft height and form of the proposed building will be seen and will block views to the west. The existing tree masses in this area and subsequently along the trail leading down, may tend to screen and filter the vistas but, the new proposed hospital will entirely block scenic vistas and dominate the view. This is a significant change to the public view and the inherent quality of the trail head and experience of accessing and walking this trail. This impact to the environmental quality of this publically accessible trail is significant and should be taken into account in considering mitigation measures or alternatives.

Furthermore the entire neighborhoods to the east, and views from streets such as Edgewood and Belmont and Willard and areas to the north of Parnassus Ave such as Hill Point Way will also be visually impacted by the large dominant mass of the new hospital. The size and height of the new hospital will also block views to Mt Sutro and the forest reserve from areas north of Parnassus Ave and Irving Street, and the visual experience of seeing a natural setting of a forested hillside from the local sidewalks and streets will be changed to one of a large urban building.

The visual simulations shown here have been constructed within Google Earth and incorporate scale models of the building masses and heights identified in the DEIR.

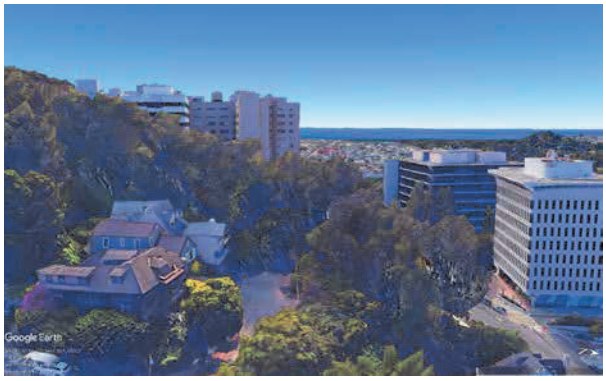


Figure 3 View west from end of Farnsworth

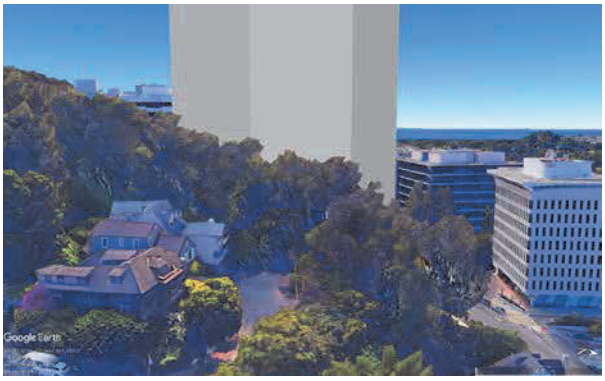


Figure 4 View west from end of Farnsworth with new hospital

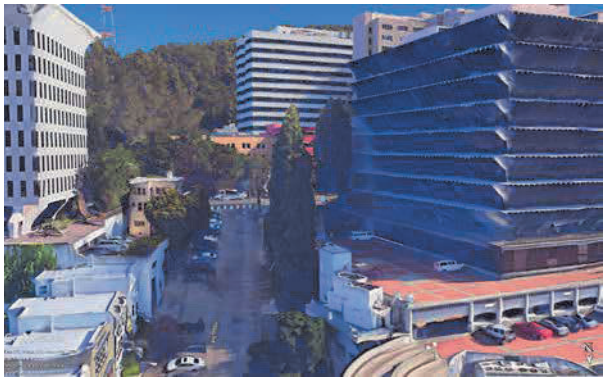


Figure 5 View south from Hill Point Way

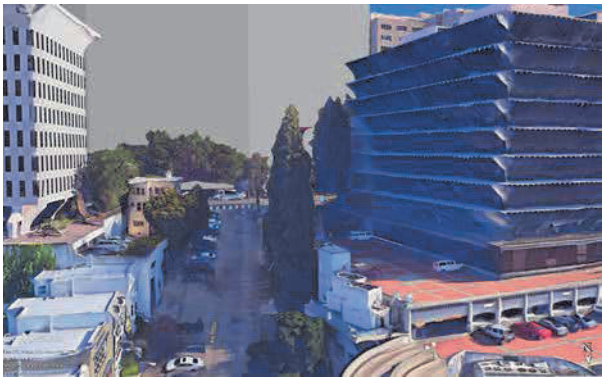


Figure 6 view south from Hill Point Way with new hospital

The views from the trailhead at the end of Farnsworth and adjacent residential neighborhood will become dominated by the mass of the new proposed hospital.

By stating that impacts to publically available scenic vistas are less than significant, the DEIR does not provide any possible mitigation measures or alternatives. This precludes further discussion and possible mitigation measures in future specific project environmental review and essentially allows development of the height and massing of the proposed buildings at this stage of the review process.

Views from other Prominent Vantage Points

The DEIR also identifies several other prominent publically accessible vantage points. These include Tank Hill natural area, Buena Vista Park, and Corona Heights Park. These are all located to the east of the Parnassus Heights campus. The DEIR states that the implementation of the CPHP would not result in a substantial adverse impact to scenic vistas from these publically accessible vantage points. However, in review it is again apparent that the new proposed hospital would change the skyline. (*see figures 7 through 12)*

Fig 7 view westward from Tank Hill natural area

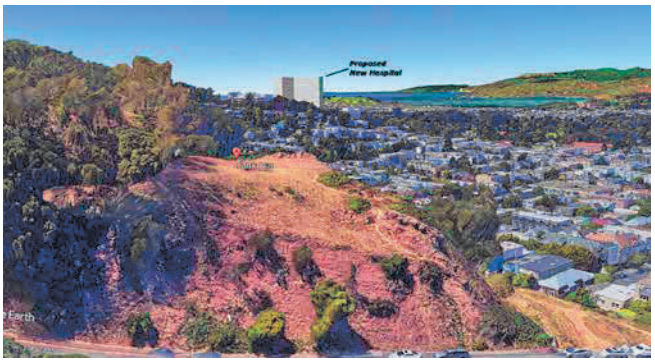


Fig 8 view from Tank Hill natural area with proposed new hospital

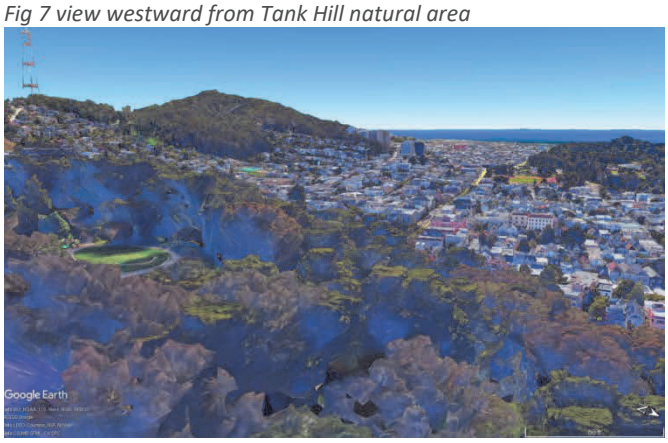


Figure 3 view from Buena Vista Park

Figure 5 view from Buena Vista Park with proposed hospital

Figure 4 View from Corona Heights Park

Figure 6 View from Corona Heights Park with proposed hospital

The development of the CPHP will undoubtedly change the visible skyline by addition of the new 294 foot high hospital. This is a noticeable change and should be addressed in the context of the Urban Design

Element of the San Francisco General Plan. The height and mass of the proposed new hospital will be highly visible as a new feature in the skyline from these public parks as well as from various other locations and streets within the surrounding neighborhoods. The Urban Design Element includes a policy to: "*Recognize and protect major views in the city, with particular attention to those of open space and water. Views contribute immeasurably to the quality of the city and to the lives of its residents. Protection should be given to major views whenever it is feasible, with special attention to the characteristic views of open space and water that reflect the natural setting of the city and give a colorful and refreshing contrast to man's development."*

The Urban Design Element of the city's General Plan states that shape, height and bulk of tall building with respect to views from important vantage points around the city should contribute to the beauty of the skyline. While views from private property are not protected in city regulations, the General Plan does protect specific view corridors from the public realm.

It is not clear in the DEIR whether the CPHP has undergone an initial Preliminary Project Assessment by the city's Urban Design Advisory Team (UDAT) to determine consistency with Urban Design Guidelines and other relevant design regulations, the Planning Code, and other policies in the General Plan. Is this review to come at a later environmental review as the project evolves? If so, does this mean that the height and mass of the new hospital is a given if this plan is approved. Since the proposed new hospital will be seen from several publically accessible view points and parks, it seems that such a major feature that will change the visible skyline should be reviewed and assessed by UDAT prior to further project level environmental review.

Overall Impact on Shadow

The DEIR states that implementation of the CPHP would not create new shadows in a manner that would substantially and adversely affect the use and enjoyment of publically accessible open spaces. The DEIR provides description and diagrams of shadow impacts onto various public locations during different seasons and times of day. These public locations include parks and schools which are some distance away and will receive "occasional shadow". The DEIR states that these areas would not be adversely affected and the impact is considered less than significant.

It appears though that certain areas along Parnassus Ave and Irving St. will be subject to "frequent shadows" throughout the year. (*Fan 1 of the Shadow Study Appendix within the DEIR*) Although these are not officially called out as "publically accessible open spaces" needing to be addressed within the city's Urban Design Element guidelines, they are public sidewalk and streets that are frequented by pedestrians and passerbys. These areas currently receive shadows from existing structures but, it can be expected that the increased height of the proposed new hospital and Milberry Terrace and Irving St Gateway projects will further increase the time and frequency of the shadows along Irving St and Parnassus Ave.
Although shadows do not directly affect change in air temperature, they do affect the direct exposure to sun radiation and the resulting feeling of warmth to a person's body. Further, sun radiation can affect the temperature of a surface struck by sunlight and increase that temperature and it's surroundings. The comfort and attractiveness of these particular areas to pedestrians and passerbys may be adversely affected and should be addressed in the EIR. The city's Urban Design Guidelines state that plazas or parks located in the shadows cast by large buildings can be unpleasant for the user and large buildings can be oriented to minimize shadows falling on public or semi-public open space. The guidelines state that the height and mass of tall, closely packed buildings can be shaped to permit sunlight to reach open spaces.

The CPHP does provide new open pedestrian areas within the campus and that is welcomed and appreciated and is a positive. But, discussion of the impact to the existing local areas and circulation patterns should still be noted and made aware to the public. There should be a discussion of how impact to these public areas might be mitigated.

Conclusion

The existing features of Mt Sutro and the Forest Reserve provide form and a sense of place and living within the environment to the UCSF campus and adjacent neighborhoods. The new CPHP with its heights and mass of proposed buildings would alter and change that sense. As noted in the city's Urban Design Element:

"The uses and benefits of the city pattern are many and profound. This pattern is, first of all, bound up in the image and character of the city. To weaken or destroy the pattern would make San Francisco a vastly different place. Second, the city pattern has important psychological effects upon residents of the city. It provides organization and measured relationships that give a sense of place and purpose and reduce the degree of stress in urban life. Outlooks upon a pleasant and varied pattern provide for an extension of individual consciousness and personality, and give a comforting sense of living with the environment."

The visual change from the implementation of the CPHP will be seen from many locations throughout the adjacent neighborhoods as well as other areas and parks within the city including areas of Golden Gate Park. The impact of the shadow patterns to the adjacent neighborhoods will also affect the quality experiences of spaces and pedestrian walkways by the public. These should be considered in the approval process and given recognition in the EIR.

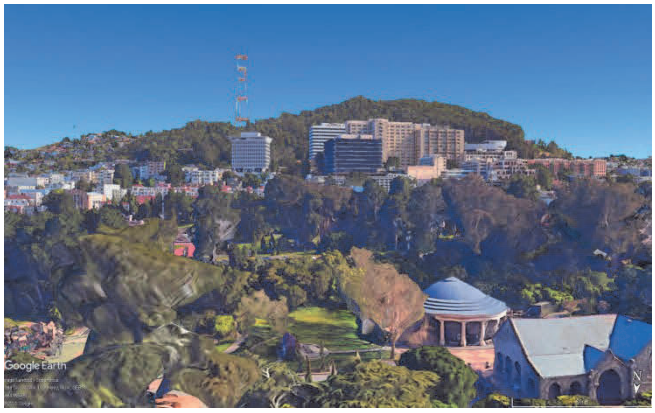


Figure 10 view south from above Golden Gate Park

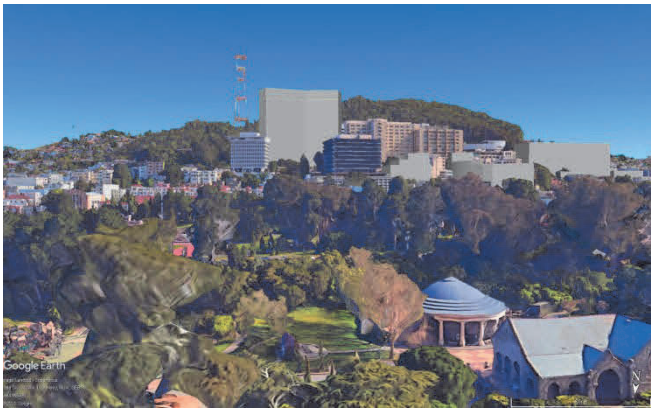


Figure 17 view south from Golden Gate Park with implementation of CPHP

Appendix:

Jared M. Ikeda

Jared Ikeda is a retired Landscape Architect and environmental planner with experience in preparation of land use planning studies, community planning, environmental impact studies, urban site planning, landscape development plans, and recreation planning. He has been involved in a wide range of studies and projects for both public and private sector clients and has participated in and directed all phases of land planning, investigative studies and landscape development. He has served on the board of directors of a major international landscape architectural firm, and Landwatch Monterey County, and served as a lecturer in the Department of Landscape Architecture at California State Polytechnic University, Pomona. His teaching activities focuses upon advanced landscape design and stressed use of computer technology including AutoCAD and ArcMap GIS software. He has prepared a number of visual impact and simulation studies using a variety of computer software including Sketchup and Google Earth. He has been involved in the preparation of the Monterey County General Plan Update from 1999 to 2004 and was responsible for studies and preparation of the Environmental Resource Management Element and the Circulation Element. He also directed consultant work on the Environmental Impact Report.

Project Experience
A selected list of relevant project experience includes:

Granite Chief Wilderness Area – Visual simulation of a proposed gondola
Client: Mountain Area Preservation Foundation

Preparation of a visual simulation of a proposed gondola system connecting the Squaw Valley Resort with Alpine Meadows village. The gondola system crosses an area adjacent to the Granite Chief Wilderness area and impacts the visual quality within the wilderness area.

Donner Summit Development Impact Study

Client: Sierra Watch and the Sierra Club

As part of a consulting team charged with review and comment upon a potential new development of an environmentally sensitive area of the Donner Summit, Mr Ikeda prepared GIS mapping and visual simulation of the proposed plan utilizing Google Earth software.

Dyer Mountain Visual Simulations

Client: Shute Mihaly Weinberger, llc

Mr Ikeda prepared 3 dimensional visual simulations of a proposed forest management plan and ski resort development in Lassen County. The work was utilized to demonstrate the visual impact of the proposed plan.

Colosseum Gold Mine – Visual Impact Analysis
Client: Bureau of Land Management

Prepared a visual impact analysis and land restoration plan for the Colosseum Gold Mine, an open pit gold mine near the California/Nevada border. The project utilized computer generated visual simulations.

Professional Experience
Principal: Ikeda Consulting, 2005 to Present
Monterey County Redevelopment Agency, 2004-2005
Senior Admin Analyst: County of Monterey, Environmental Resource Policy, 1999-2004
Lecturer: Cal Poly Pomona, Dept of Landscape Architecture 1997-1999
Vice-President/Officer-in-Charge EDAW Inc., Irvine Office: 1980 to 1987

EDAW, Inc. 1969 to 1989

Education

Bachelor of Science in Environmental Design, California State Polytechnic University, Pomona, 1968.

Honors

Best Comprehensive Plan, Orange Co. Section, American Planning Association, San Juan Capistrano Master Open Space Plan, 1992
Distinguished Alumnus Award, 1983, School of Environmental Design, California State Polytechnic University, Pomona.
Merit Award, American Society of Landscape Architects, Santa Ana River Open Space Study, 1973

Lectures & Publications

Mr. Ikeda has served as a guest lecturer at UCLA, UC Irvine, and Cal Poly Pomona. Mr. Ikeda has also served as Chairman of a panel on Computers and Landscape Architecture for the Southern California Chapter of the American Society of Landscape Architecture.
Contributor to *"Design with Digital Tools"* McGraw Hill, 2000

EXHIBIT 12

LOZEAU DRURY LLP

T 510.836.4200
F 510.836.4205

1939 Harrison Street, Ste. 150
Oakland, CA 94612

www.lozeaudrury.com
richard@lozeaudrury.com

Via Email

January 18, 2021

John A. Pérez, Chair
Cecilia Estolano, Vice Chair
Regents of the University of California
c/o Ms. Diane Wong
UCSF Campus Planning, Box 0286
San Francisco, CA 94143
EIR@UCSF.edu
regentsoffice@ucop.edu

Re: Comment on Final Environmental Impact Report, UCSF Comprehensive Parnassus Heights Plan (SCH 2020010175)

"The total structures within the campus boundaries shall not exceed 3.55 million gross square feet (not including space committed to residential use on Third, Fourth, Fifth and Parnassus Avenues and Kirkham and Irving Streets) and this limit shall be permanent."

-Resolution of the Board of Regents of the University of California, May 21, 1976 (Exhibit A)

Dear Chair Pérez, Vice Chair Estolano, and Honorable Regents:

This letter is submitted on behalf of the Parnassus Neighborhood Coalition ("PNC"), a group of residents living near the University of California, San Francisco ("UCSF") Parnassus Heights campus, regarding the Final Environmental Impact Report ("FEIR") prepared for the Comprehensive Parnassus Heights Plan ("CPHP") (SCH 2020010175) (the "Project"). After reviewing the FEIR, we conclude that the FEIR fails as an informational document, fails to adequate respond to comments on the DEIR, and fails to impose all feasible mitigation measures and alternatives to reduce the Project's impacts. PNC requests that the University address these shortcomings in a revised draft environmental impact report ("RDEIR") and recirculate the RDEIR prior to considering approvals for the Project.

I. REQUEST OF EXTENSION OF COMMENT PERIOD.

On January 11, 2021, staff released the FEIR, for a bare minimum 10-day comment period. Pub. Res. Code 21092.5. However, the Regents' rules require comments to be submitted 24 hours prior to the start of the 3-day meeting, which is Monday, Feb. 18, which is a state and federal holiday (Martin Luther King, Jr. Day). This provides an unlawfully short and patently inadequate opportunity for the public to review and comment on the FEIR, which totals over 5000 pages. On January 12, 2021, the San Francisco Board of Supervisor adopted a resolution asking the Regents to continue consideration of the FEIR to March, 2021, to allow the public and the City two months to review the FEIR. https://sfbos.org/sites/default/files/bag011221_minutes.pdf. We urge the Regents to honor this reasonable request from the governing body of UCSF's host city. In addition, we submit herewith a petition signed by 896 local residents asking the Regents to extend the public review period on the FEIR and to abide by the Regents' own resolution establishing a Space Ceiling. (Exhibit A).

We therefore request an extension of the comment period and submit this letter under protest. Furthermore, we reserve the right to file additional comments up to and including the date of the final decision and hearing by the Regents, as allowed by state law. Pub. Res. Code section 21177; *Bakersfield Citizens for Local Control v. City of Bakersfield,* 124 Cal.App.4th 1184 (2004).

Despite the short timeline, it is apparent that the FEIR fails to comply with the requirements of CEQA. The FEIR fails to provide adequate or substantive responses to many of the comments submitted on the Draft EIR, fails to impose feasible mitigation measures, changes the project description dramatically, identifies new significant impacts that require new mitigation measures, and contains other defects. A RDEIR is required to address these defects.

II. PROJECT DESCRIPTION

In 2014, the University of California prepared a Long Range Development Plan ("LRDP") setting forth concepts, principles, and plans to guide future growth for the UCSF campus, outlining projected development levels and patterns for UCSF at all of its main campus sites through 2035. The Regents certified the FEIR for the LRDP in November 2014, which included an analysis of the potential environmental impacts from the then-envisioned development at the Parnassus Heights campus site. However, at some point after this, UCSF undertook an entirely new planning process to dramatically expand the Parnassus Heights campus, resulting in the development of the CPHP, which provides a long-term development framework for the "revitalization" of the Parnassus Heights campus.

This Project proposes to develop approximately 2.9 million gross square feet ("gsf") of new building space at Parnassus Heights. The CPHP includes an "Initial

Phase" that comprises of: 1) Irving Street Arrival improvements, 2) Research and Academic Building ("RAB"), 3) initial Aldea Housing Densification, and 4) New Hospital. This Initial Phase is anticipated to be completed by approximately 2030. Beyond the Initial Phase, the "Future Phase" encompasses the remaining development described in the CPHP envisioned for completion by the horizon year of 2050. However, when accounting for existing campus site development, demolition that was approved under the UCSF 2014 LRDP but not yet implemented, and potential additional building demolition that would occur under the CPHP, the total amount of campus space upon full implementation of the CPHP would be 6.0 million gsf.

The CPHP for the first time reneges on the promise made by the UC Regents in 1976 to the City of San Francisco and the community of Parnassus Heights to resolve a CEQA lawsuit that the Parnassus campus would never exceed 3.55 million square feet – which has generally been referred to as the "Space Ceiling." The CPHP would exceed this Space Ceiling by over 2 million square feet, making a mockery of this false promise.

II. LEGAL BACKGROUND

The lead agency must evaluate comment on the draft EIR and prepare written responses in the final EIR. (PRC §21091(d)) The FEIR must include a "detailed" written response to all "significant environmental issues" raised by commenters. As the court stated in *City of Long Beach v. LA USD* (2009) 176 Cal.App.4th 889, 904:
The requirement of a detailed written response to comments helps to ensure that the lead agency will fully consider the environmental consequences of a decision before it is made, that the decision is well informed and open to public scrutiny, and that public participation in the environmental review process is meaningful.

The FEIR's responses to comments must be detailed and must provide a reasoned, good faith analysis. (14 CCR §15088(c)) Failure to provide a substantive response to comment render the EIR legally inadequate. (*Rural Land Owners Assoc. v. City Council* (1983) 143 Cal.App.3d 1013, 1020). If the public suggests a feasible mitigation measure or alternative, the agency may only decline to implement it if it provides substantial evidence that the mitigation measure or alternative is infeasible. (*Covington v. Great Basin Unified Air Pollution Control Dist*., 43 Cal. App. 5th 867, 256 Cal. Rptr. 3d 902 (2019)).

The responses to comments on a draft EIR must state reasons for rejecting suggested mitigation measures and comments on significant environmental issues. "Conclusory statements unsupported by factual information" are not an adequate response. (14 CCR §15088(b, c*); Cleary v. County of Stanislaus* (1981) 118 Cal.App.3rd 348) The need for substantive, detailed response is particularly appropriate when comments have been raised by experts or other agencies. (*Berkeley Keep Jets v. Bd. of Port Comm'rs* (2001) 91 Cal.App.4th 1344, 1367; *People v. Kern*

(1976) 72 Cal.app.3d 761) A reasoned analysis of the issue and references to supporting evidence are required for substantive comments raised. (*Calif. Oak Found. v. Santa Clarita* (2005) 133 Cal.App.4th 1219).

If significant new information is added to an Environmental Impact Report (EIR) after notice of public review has occurred, but before final certification of the EIR, the lead agency must issue a new notice and recirculate the EIR for comments and consultation. (Pub. Res. Code § 21092.1; 14 CCR § 15088.5.) "Significant new information" triggering the need for EIR recirculation includes information showing that (1) a new or more severe environmental impact would result from the project, (2) a feasible project alternative or mitigation measure considerably different from others previously analyzed would clearly lessen the significant environmental impacts of a project but the project proponent declines to adopt it, or (3) the draft EIR was so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded. (14 CCR § 15088.5(a)(1)-(4).) A decision not to recirculate an EIR must be supported by substantial evidence in the administrative record. (14 CCR § 15088.5(e).)

The FEIR abjectly fails to meet these legal standards, as it is riddled with conclusory statements lacking any factual support or analysis.

IV. DISCUSSION

A. Space Ceiling.

The most glaring shortcoming of the CPHP is that it reneges on the Regents' promise to the City of San Francisco and the community of Parnassus Heights never to exceed 3.55 square feet of development at the Parnassus Heights campus. This promise was made by the Regents themselves to resolve a lawsuit in 1976, and has been reaffirmed countless times thereafter, most recently in the 2014 LRDP. In May 21, 1976, the Regents adopted a resolution stating the following:

> The total structures within the campus boundaries shall not exceed 3.55 million gross square feet (not including space committed to residential use on Third, Fourth, Fifth and Parnassus Avenues and Kirkham and Irving Streets) and ***this limit shall be permanent.*** These restrictions prohibit expansion by UCSF by purchase or condemnation or gift of any property or lease of private residential property not only contiguous with the new campus boundaries, but anywhere within the surrounding area bounded by Golden Gate Park, Oak Street, Ninth Avenue, Clayton and Clarendon. This does not prohibit the use of commercial properties or the affiliation with other public agencies within the area described.

1976 Resolution, ¶ 2 (emphasis added). The Regents directed that these commitments be amended into the 1975 Long Range Development Plan. Id., ¶ 6 ("That the Long Range Development Plan for the San Francisco campus, as approved by The Regents in October, 1975, be amended to reflect the described changes in designation of open space, boundaries, and use of housing").

Retired San Francisco Superior Court Judge James Robertson submitted additional evidence during the public comment period that the Space Ceiling was intended to be permanent, just as it says in black and white. Residents filed a CEQA suit in 1976 and dismissed that suit only because the Regents agreed to the "permanent" space ceiling. The minutes of the 1976 Regents meeting at which the Space Ceiling was adopted make clear that the Regents were well-aware that this was a "permanent" commitment that would bind the Regents in the future. Regent Morris stated that the 3.55 million square foot limitation would be "permanent." "He did not construe the word 'permanent' as implying flexibility." He believed the cap would "commit future Boards to this extent 100 years hence." Despite these concerns, the Regents adopted the Space Ceiling without amendment. (Id.).

UC has repeatedly relied on the Space Ceiling to justify other expansions. As the former Chancellor of UCS stated to justify the UCSF Mission Bay Campus:

> As Chancellor of The University of California, San Francisco, I am pleased to present UCSF's 1996 Long Range Development Plan (LRDP), which was approved by The Regents on January 17, 1997. The 1996 LRDP will guide the physical development of UCSF over the next fifteen years, into the second decade of the 21st century. This LRDP has been prepared not only with close attention to the needs of the UCSF campus community, but also to the concerns of the wider community, which joined with us to establish the goals and objectives that guided the development of the LRDP. We are most grateful for this participation and encouragement. This LRDP reaffirms the principles of the 1976 Regents' resolution which has limited development at the Parnassus Heights site. Recognizing constraints to future development at Parnassus Heights, the LRDP has been prepared, in part, to help UCSF and The Regents acquire and develop a major new campus site. A major new site is desirable for several reasons. First, there is the need to relieve our extremely crowded conditions, particularly at the Parnassus Heights site where we are, without question, the most crowded campus among comparable institutions. Second, we need to provide additional space to support UCSF's research into the causes and treatment of illnesses, some of which are undoubtedly unknown to us today, just as the impending HIV crisis was unforeseen at the time of the 1982 LRDP. Finally, we must find a way to consolidate UCSF units currently scattered throughout San Francisco.

The FEIR ignore entirely our arguments that the Space Ceiling is a binding commitment and enforceable under the doctrines of equitable estoppel and promissory estoppel. The FEIR merely makes a conclusory statement that since the Space Ceiling was created by the Regents, it may also be destroyed by the Regents. This argument ignores entirely the estoppel arguments and the fact that the Regents made the Space Ceiling "permanent." In short, the FEIR begs the question, "what does the word 'permanent' mean?"

B. Zakheim Murals.

The DEIR proposed to destroy priceless murals painted by Bernard Zakheim as part of the WPA program. The DEIR also admits that the Project as proposed would result in a significance and unavoidable adverse change in the significance of known historical resources, in particular the UC Hall which includes the Bernard Zakheim murals. DEIR, p. 4.4-12. During the 1930s, Zakheim, a student of Diego Rivera, was one of the leading artists in the area who were creating major public art under the auspices of the New Deal art programs. The ten murals that make up Zakheim's *History of Medicine* (1936-39) constitute one of this region's largest New Deal art projects by a single artist. Despite housing such important artwork, the Project proposes to demolish UC Hall. *Id*.

After criticism from the New York Times, Los Angeles Times, San Francisco Chronicle and others, UC relented and stated that they would preserve the murals by safely removing them and storing them, with possible plans to relocate them. This promise was relayed to the media, the San Francisco Board of Supervisors and others, and was formalized in a Memorandum of Understanding between UCSF and the City of San Francisco Planning Commission. This raises several problems.

First, UCSF admitted in the hearing of the San Francisco Board of Supervisors Land Use Committee that the MOU is unenforceable. (https://sanfrancisco.granicus.com/TranscriptViewer.php?view_id=177&clip_id=37480). Supervisor Peskin asked UCSF Chancellor Sam Hawgood to incorporate the commitment to preserve the murals into the EIR so that it would be enforceable. Chancellor Hawgood refused and insisted that the MOU be separate from the EIR. Id.

By contrast, the FEIR continues to state that UC reserves the right to destroy the priceless Zakheim Murals. The FEIR states:

> The University is currently assessing how best to relocate the large 10-panel set of murals, the "History of Medicine in California," painted on the walls of Toland Hall auditorium in the century-old UC Hall. UC Hall is seismically deficient and functionally obsolescent, and is proposed to be replaced by a new facility that meets California's seismic codes.

> UCSF has determined that it may be infeasible to remove and relocate the murals as there is no guarantee that any effort to remove them would be successful.
>
> (FEIR 8.3-38).

Thus, despite assurances in the unenforceable MOU that UC will preserve the murals, the enforceable EIR states that "there is no guarantee" that UC will preserve the murals. UCSF's commitments are inconsistent and contradictory.

CEQA requires that mitigation measures must be fully enforceable through permit conditions, agreements or other legally binding instruments. 14 CCR § 15126.4(a)(2). See *Woodward Park Homeowners Assn., Inc. v. City of Fresno* (2007) 150 Cal. App. 4th 683, 730 (project proponent's agreement to a mitigation by itself is insufficient; mitigation measure must be an enforceable requirement). The mitigation measures to preserve the Zakheim murals is not enforceable because its is contained in the unenforceable MOU, and excluded from the enforceable EIR.

CEQA requires that all feasible mitigation measures must be implemented. The mitigation measure to preserve the Zakheim murals is clearly feasible since UC has included it in the MOU. However, UC has failed to include the measure in the EIR. The failure to include a feasible mitigation measure in the FEIR renders the document legally inadequate, and the UC therefore is precluded from adopting a statement of overriding considerations. *Covington v. Great Basin*, 43 Cal.App.5th 867.

Furthermore, even if the measure were included in the FEIR, it is not adequate the mitigate the impact. The MOU proposes merely to remove the murals and store them. Placing the murals in storage for all eternity does not mitigate the impact. Art has no value if cannot be seen. Even the MOU fails to commit to display the murals prominently in the new building or anywhere else. The FEIR and MOU both merely state that "UCSF continues to assess how best to safety relocate the murals." (FEIR 8.3-20). The FEIR states, "Assuming removal of the murals to a temporary storage facility is successful, UCSF will explore options to either return the murals to the Parnassus Heights campus site to be incorporated in a future new building that can accommodate them, or to relocate them to a museum or other institution where they can be maintained by experts and made accessible to a broad public audience." (FEIR 8.3-39). Thus, even if the murals are not destroyed, there is no commitment to display the murals. This is inadequate mitigation. It is clearly feasible to display the murals at a prominent location at the University or elsewhere. The EIR must be revised to include an enforceable requirement to preserve the murals and display them publicly.

C. SIGNIFICANT NEW IMPACTS REQUIRE RECIRCULATION

The FEIR identified six (6) new significant impacts that were not identified in the draft EIR. While the FEIR proposes mitigation measures that will allegedly reduce these impacts to a level of less than significant (LTS), as a matter of law a revised draft EIR is required to analyze these impacts, to consider whether the proposed mitigation measures are adequate, and to consider additional mitigation measures and alternatives.

CEQA Guidelines Section 15088.5 and CEQA section 21092.1 set the standard requiring recirculation prior to final project approval. Recirculation of an EIR is required when "significant new information is added to the EIR after public notice is given of the availability of the draft EIR for public review under Section 15087 but before certification [of the Final EIR]." New information added to an EIR is significant when "the EIR is changed in a way that deprives the public of a meaningful opportunity to comment upon a substantial adverse environmental effect of the project or a feasible way to mitigate or avoid such an effect (including a feasible project alternative) that the project's proponents have declined to implement." The Guidelines require recirculation when:

> (1) A new significant environmental impact would result from the project or from a new mitigation measure proposed to be implemented.
> (2) A substantial increase in the severity of an environmental impact would result unless mitigation measures are adopted that reduce the impact to a level of insignificance.
> (3) A feasible project alternative or mitigation measure considerably different from others previously analyzed would clearly lessen the environmental impacts of the project, but the project's proponents decline to adopt it.
> (4) The draft EIR was so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded. (*Mountain Lion Coalition v. Fish and Game Com*. (1989) 214 Cal.App.3d 1043)

Recirculation is also required when the FEIR identifies new mitigation measures. Recirculation is required because the public was denied the opportunity for comment and response on this "ostensibly feasible way to mitigate" the Project's cumulative impacts. *Spring Valley*, *supra*, 248 Cal. App. 4th at 108 [FEIR proposes entirely new mitigation proposal]. *Gray v. County of Madera* (2008) 167 Cal.App.4th 1099, 1120 also holds that an EIR's failure to evaluate water supply mitigation requires recirculation. Recirculation is warranted where the agency's ultimate rational for its significance conclusion does not appear in the draft EIR. (Pesticide Action Network North America v. Department of Pesticide Regulation (2017) 16 Cal.App.5th 224, 252 [DEIR "provided no analysis or explanation to show how it reached that conclusion"]; Save Our Peninsula, supra, 87 Cal.App.4th at 128-131 [belated identification of mitigation offset parcel without analysis in DEIR], 131-134 [belated claim of riparian rights as basis for adequacy of water supply].)

The FEIR report shows that Project will have new significant impacts that were not analyzed in the DEIR, that there will be an increase in severity of impacts over the level analyzed in the DEIR, and that the DEIR is so fundamentally and basically inadequate conclusory in nature that meaningful public review and comment were precluded. The FEIR proposes new mitigation measures for these impacts, but these measures were not presented in the DEIR and the public had no adequate opportunity to review and comment on these measures. Therefore a recirculated draft EIR is required pursuant to CEQA Guidelines section 15088.5.

For example, the FEIR for the first time states that the Project may have significant cumulative particulate matter (PM-10) impacts. (FEIR 2-13). This is contradicts the DEIR's conclusion that there would be no such impacts. As mitigation, the FEIR proposes to require Tier 4 Final construction equipment rather than Tier 4 Interim. However, this makes no sense. Tier 4 Final construction equipment reduce nitrogen oxides (NOx) emissions, not PM-10 as compared to Tier 4 Interim. Thus, the proposed measure does not even address the new impact. This points out exactly why this new impact should have been analyzed in a RDEIR rather than hidden away in the FEIR.

The FEIR discloses a new geotechnical impact, GEO-3. (FEIR 2-25). The mitigation measure is that UC will hire a geotechnical expert to submit a report. This is plainly inadequate deferred mitigation. CEQA prohibits the agency from deferring the development of mitigation until after project approval. "[M]itigation measure[s] [that do] no more than require a report be prepared and followed" do not provide adequate information for informed decisionmaking under CEQA. *Endangered Habitats League, Inc. v. County of Orange* (2005) 131 Cal.App.4th 777, 794; Guidelines § 15126.4(a)(1)(B).

The FEIR discloses four new hydrological impacts, HYD-1, (FEIR 4.9-10 to 4.9-13); HYD-2, C-HYD-1 and C-HYD-2. The FEIR states, "Construction and operation of campus development under the CPHP would have the potential to violate water quality standards or waste discharge requirements, or otherwise substantially degrade surface or groundwater quality." This is exactly the opposite of the DEIR's conclusion: "Construction and operation of campus development under the CPHP would **not** have the potential to violate water quality standards or waste discharge requirements, or otherwise substantially degrade surface or groundwater quality." (emphasis added) The FEIR thus identifies a potentially significant impact that the DEIR did not disclose, analyze or seek to mitigate. The FEIR discloses for the first time that the Project may overwhelm San Francisco's stormwater system, which is already releasing untreated raw sewage into the Pacific Ocean during rain events. The Project will only make this situation worse. This impact was not disclosed at all in the DEIR. As mitigation, the FEIR proposes that UCSF will "Avoid increasing the likelihood of surcharges by exceeding the capacity of the City's CSS." Id. However, this "mitigation" does not ensure that the impact will be rendered less than significant. It imposes no enforceable

standard or numerical threshold. This impact must be analyzed and specific mitigation measures proposed in a RDEIR.

D. PROJECT CHANGES REQUIRE NEW EIR.

UC promises in the MOU with the City of San Francisco to increase the amount of housing provided as part of the Project. The MOU promises to add 1,263 housing units above the 762 units analyzed in the DEIR, bringing the total amount of housing to 2025 units. While the PNC fully supports the additional housing, the new housing will have new impacts on public services (schools, police, fire, sewer), traffic, greenhouses gases, air quality, energy use, and almost every other factor. These impacts must be analyzed and mitigated in a RDEIR. UCSF cannot shield these impacts from review by placing the commitment in an MOU and excluding it from the EIR. The EIR must accurately describe the project that will actually be constructed. It simply fails to do this. Even if UCSF were proposing only to construct 1263 units of housing, this alone would require CEQA review. UC cannot simply add what would itself be massive residential development to an existing EIR and pretend that it has no impacts.

For example, under the Bay Area Air Quality Management District ("BAAQMD") standards, an apartment building with more than 494 units would be expected to have significant emissions of reactive organic gases (ROGs) (Exhibit B). UCSF is proposing to construct over double this amount of new apartments. This must be analyzed in a RDEIR. Urban planner Terrell Watt provides expert comments that the revised Project will have additional impacts on schools, traffic, police services, fire services, and many other elements that must be analyzed and mitigated in a RDEIR.

In *Washoe Meadows Community v. Dept. of Parks & Recreation* (2017) 17 Cal.App.5th 277 ("*Washoe"*), the court held, "***[F]or a project to be stable, the DEIR, the FEIR, and the final approval must describe substantially the same project***." As our Supreme Court explained, "[t]he defined project ***and not some different project*** must be the EIR's bona fide subject." (*Concerned Citizens of Costa Mesa v. 32nd Dist. Agric. Ass'n* (1986) 42 Cal.3d 929, 934 ("*Costa Mesa*") [emphasis added].) Whether an EIR correctly describes a project is a question of law, subject to *de novo* review." (*South of Market Cmty. Action Network v. City & Cnty. of San Francisco* (2019) 33 Cal.App.5th 321, 332 ("*SoMa*").) By adding 1263 residential units to the project, the DEIR and FEIR do not describe the same project.

For over forty years the courts have consistently held that an accurate and stable project description is a bedrock requirement of CEQA—the *sine qua non* (that without which there is nothing) of an adequate CEQA document:

> Only through an accurate view of the project may affected outsiders and public decision-makers balance the proposal's benefit against its environmental cost, consider mitigation measures, assess the advantage

> of terminating the proposal (i.e., the "no project" alternative) and weigh other alternatives in the balance. An accurate, stable and finite project description is the *sine qua non* of an informative and legally sufficient EIR.

(*County of Inyo v. City of Los Angeles*, 71 Cal. App. 3d 185, 192 (1977).)

The ability of informed citizens to participate in environmental review is a key component of CEQA. (*Washoe*, *supra*, 17 Cal.App.5th at 285 ["Informed public participation is essential to environmental review under CEQA."]; *Inyo*, *supra*, 71 Cal.App.3d at 192 ["The EIR process facilitates CEQA's policy of supplying citizen input."].) Through the EIR process, CEQA "provide[s] public agencies and the public in general with detailed information about the effect which a proposed project is likely to have on the environment." (*Washoe*, *supra*, 17 Cal.App.5th at 286 [quoting Pub. Res. Code § 21061].)

In *Inyo*, the court first articulated that "[a] curtailed or distorted project description may stultify the objectives of the [CEQA] process." (*Inyo*, *supra*, 71 Cal.App.3d at 192.) This court recently noted that the requirement for an accurate, stable, and finite project description has been "reiterated in a number of cases since *County of Inyo*." (*Millennium*, *supra*, 39 Cal.App.5th at 17 [citing *Treasure Island*, *supra*, 227 Cal.App.4th at 1052; *Communities for a Better Envt. v. City of Richmond* (2010) 184 Cal.App.4th 70, 85-89; *San Joaquin Raptor Rescue Ctr. v. County of Merced* (2007) 149 Cal.App.4th 645, 653 ("*San Joaquin Raptor*")].)

As discussed below, in *Inyo* and the subsequent cases applying its accurate project description requirement, the courts have found that an unstable project description runs afoul of the informational requirements of CEQA which facilitate informed decision-making and public participation. (see, e.g., *Millennium*, *supra*, 39 Cal.App.5th at 17-18; *Washoe*, *supra*, 17 Cal.App.5th at 288-89; *Inyo*, *supra*, 71 Cal.App.3d at 197.)

In *Millennium*, this court evaluated the project description for a large mixed-use development, which described three conceptual development scenarios that would satisfy the project's Development Agreement (*Millennium*, *supra*, 39 Cal.App.5th at 9-10.) The scenarios presented in the DEIR only depicted potential massing options that might have been developed and, thus, "the public had no idea how many buildings or towers would be built and where they would be located on the project site." (*Id.* at 11.)

This Court held that the DEIR did not meet CEQA's requirement for an accurate, stable or finite proposed project because "it fails to describe the siting, size, mass, or appearance of any building proposed to be built at the project site" and "presents different conceptual scenarios that Millennium or future developers may follow for the development of this site." (*Millennium*, *supra*, 39 Cal.App.5th at 18.) Notably, this court noted that the failure to include an accurate, stable, and finite project description "***was***

an obstacle to informed public participation 'even if we cannot say such input would have changed the project ultimately selected and approved.'" (*Id*. at 20 [quoting *Washoe*, *supra*, 17 Cal.App.5th at 290] [emphasis added].)

In *Washoe*, the court evaluated a DEIR prepared by the California Department of Parks and Recreation which described five different alternatives for a project, including an existing 18-hole golf course, to reduce sediment discharge from the Upper Truckee River into Lake Tahoe. (*Washoe*, *supra*, 17 Cal.App.5th at 283.) The DEIR did not identify a preferred alternative but instead proposed that, after comments had been received on the DEIR, the Department would identify the preferred alternative in the FEIR to "determine which alternative or combinations of features from multiple alternatives will become the preferred alternative." (*Id*. at 283.) In the FEIR, the Department identified "[a] refined version of Alternative 2" as the preferred alternative. The Department subsequently certified the FEIR. (*Id.* at 283-84.) The petitioners sought to set aside the approval of the project because, *inter alia*, the DEIR did not contain an "accurate, stable and finite" project description. (*Id*. at 287.)

The *Washoe* court upheld the lower court's ruling in favor of the petitioners, agreeing with the lower court that "***for a project to be stable, the DEIR, the FEIR, and the final approval must describe substantially the same project***." (*Washoe*, *supra*, 17 Cal.App.5th at 288 [emphasis added].) Notably, the fact that the DEIR had a thorough analysis of the environmental impacts of Alternative 2 did not alter the court's analysis because the revised version of Alternative 2 ultimately described in the FEIR and adopted by the agency was different than the Alternative 2 in the DEIR. The court held, "an agency's failure to propose a stable project is not confined to 'the informative quality of the EIR's environmental forecasts.'" (*Id.* [quoting *Inyo*, *supra*, 71 Cal.App.3d at 197].) The court further explained:

> Rather, ***inconsistencies in a project's description***, or (as here) the failure to identify or select any project at all, ***impairs the public's right and ability to participate in the environmental review process***. A description of a broad range of possible projects, rather than a preferred or actual project, presents the public with a moving target and requires a commenter to offer input on a wide range of alternatives that may not be in any way germane to the project ultimately approved.

(*Id*. [emphasis added].)

In *Inyo*, the court of appeal reached a similar conclusion. There, the court addressed whether the description of a project related to the extraction of subsurface water satisfied the requirements of CEQA. The EIR had described the project as a 51 cubic feet per second increase in the water extraction rate. (*Inyo*, *supra*, 71 Cal.App.3d at 189.) However, the court noted, "the project concept expands and contracts from place to place within the EIR." (*Id*. at 190.) Some sections of the EIR analyzed a

"recommended project" with higher rates of groundwater extraction as well as the development of infrastructure to export water to Los Angeles even though those aspects of the project were not included in the EIR's initial project description. (*Id*.) As the court explained, "The small-scale groundwater project described at the outset was dwarfed by the 'recommended project' ultimately endorsed by the final EIR and approved by the board of commissioners." (*Id*. at 199.)

The court in *Inyo* concluded that "an accurate, stable and finite project description is the *sine qua non* of an informative and legally sufficient EIR." (*Inyo*, *supra*, 71 Cal.App.3d at 199.) Even though "the informative quality of the EIR environmental forecasts [were] not affected by the ill-conceived, initial project description," the court underscored that "[t]he defined project *and not some other project* must be the EIR's bona fide subject." (*Id*. at 197, 199 [emphasis added].) The failure to accurately describe the project, regardless of the environmental analysis in the CEQA document, violated CEQA because "the selection of a narrow project as the launching pad for a vastly different wider proposal **frustrated CEQA's pubic information aims**." (*Id*. at 199-200 [emphasis added].)

The DEIR described a Project with 763 dwelling units. UCSF is now proposing 2025 units – almost triple the amount. This renders the EIR legally inadequate. There is no way the public could have been expected to comment on the 2025 unit project since it was not included in the DEIR. The DEIR's inaccurate project description interfered with the public's ability to meaningfully participate and comment on the Project. A RDEIR is required to accurately describe the Project that will actually be built. While PNC fully supports additional housing, it cannot be denied that this housing will itself have significant impacts that must be analyzed and mitigated in a RDEIR.

E. The FEIR's Alternatives Analysis is Legally Deficient.

The FEIR refuses to analyze the several feasible alternatives proposed by public commenters. This renders the response to comments and the alternatives analysis legally inadequate. Urban Planner Terrell Watt explains that the FEIR fails to adequately respond to feasible alternatives proposed in the comments on the DEIR, in violation of CEQA.

In particular, commenters suggested alternatives including constructing the new hospital at a large vacant parcel in Hunters Point, thereby preserving the Space Ceiling, while providing medical services to San Francisco's most under-served community. Other options including building the new hospital at Mount Zion, or Mission Bay. The FEIR rejects all of these options. However, it provides no substantial evidence that these alternatives are infeasible.

An EIR must describe a range of reasonable alternatives to the Project, or to the location of the Project, which would feasibly attain most of the basic objectives of the

project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives. "An EIR's discussion of alternatives must contain analysis sufficient to allow informed decision making." *Laurel Heights I*, 47 Cal.3d at 404. An EIR must also include "detail sufficient to enable those who did not participate in its preparation to understand and to consider meaningfully the issues raised by the proposed project." *Id*. at 405.

CEQA requires public agencies to avoid or reduce environmental damage when "feasible" by requiring "environmentally superior" alternatives and all feasible mitigation measures. CEQA Guidelines § 15002(a)(2) and (3); *See also*, *Berkeley Jets*, 91 Cal. App. 4th 1344, 1354; *Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal.3d 553, 564. The EIR serves to provide agencies and the public with information about the environmental impacts of a proposed project and to "identify ways that environmental damage can be avoided or significantly reduced." CEQA Guidelines § 15002(a)(2). If the project will have a significant effect on the environment, the agency may approve the project only if it finds that it has "eliminated or substantially lessened all significant effects on the environment where feasible" and that any unavoidable significant effects on the environment are "acceptable due to overriding concerns." Pub. Res. Code § 21081; CEQA Guidelines § 15092(b)(2)(A) & (B). A "feasible" alternative is one that is capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social and technological factors. Pub. Res. Code § 21061.1; CEQA Guidelines § 15364.

The lead agency is required to select the environmentally preferable alternative unless it is infeasible. As explained by the Supreme Court, an environmentally superior alternative may not be rejected simply because it is more expensive or less profitable:

> The fact that an alternative may be more expensive or less profitable is not sufficient to show that the alternative is financially infeasible. What is required is evidence that the additional costs or lost profitability are sufficiently severe as to render it impractical to proceed with the project.

Citizens of Goleta Valley v. Bd. of Supervisors (1988) 197 Cal.App.3d 1167, 1180-81; *see also*, *Burger v. County of Mendocino* (1975) 45 Cal.App.3d 322; *County of El Dorado v. Dept. of Transp*. (2005) 133 Cal.App.4th 1376 (agency must consider small alternative to casino project); *Preservation Action Counsel v. San Jose* (2006) 141 Cal. App. 4th 1336.

In addition, an environmentally superior alternative may not be rejected because it does not meet all of the Project's objectives. Inconsistency with only some of the Project Objectives is not necessarily an appropriate basis to eliminate impact-reducing project alternatives from analysis in an EIR. CEQA Guidelines § 15126.6(c), (f); *see also Watsonville Pilots Assn. v. City of Watsonville* (2010) 183 Cal.App.4th 1059, 1089.

Here, the FEIR fails to adopt the environmentally superior alternatives and fails to describe a reasonable range of alternatives.

First, the FEIR identifies several significant environmental impacts the Project will have, as well as project alternatives that may alleviate some of these impacts. However, UCSF failed to adopt the environmentally superior alternative, or any other alternative, that would reduce the Project's impacts and failed to include and analyze several feasible alternatives that are available and would reduce some of the Project's significant impacts. The FEIR refuses to adopt the environmentally superior alternative, Alternative 2: the Reduced Project Alternative, because it would "fail to fully achieve certain Project objectives, and in particular, would not fully meet the CPHP project objectives, for space, urban design and mobility, or for the New Hospital, RAB or Aldea Housing Densification." DEIR, p. 6-71. This justification is insufficient and does not constitute substantial evidence that the environmentally superior alternative is infeasible.

Second, the FEIR fails to select the 2014 LRDP Alternative. The environmental impacts of the 2014 LRDP Alternative were already analyzed in the 2014 LRDP EIR, and this alternative would result in less significant impacts than the proposed Project. However, UCSF did not select this alternative because it "would not achieve the proposed CPHP objectives." FEIR, p. 6-20. Numerous objectives from the 2014 LRDP FEIR remain valid with respect to the proposed Project. *See id*. at 3-13. Dismissing this alternative for this reason fails to demonstrate how this alternative is not feasible.

Additionally, Urban Planner Terrell Watt, a member of the American Institute of Certified Planners, reviewed the DEIR, including the alternatives analysis, and concluded that the DEIR is legally deficient because it "fails to describe a reasonable range of alternatives, or to the location of the Project, which would feasibly attain most of the basic objectives of the Project but would avoid or substantially lessen any of the significant effects of the Project, and evaluate the merits of the alternatives." Specifically, the DEIR improperly rejected feasible off-site alternatives and omits other feasible off-site alternatives. For example, feasible alternatives to the Project that would reduce or eliminate the Project's significant impacts that the DEIR briefly considered but dismissed include the following: (1) No New Hospital at Parnassus Heights Campus Site/Implement Phase 2 of Medical Center at Mission Bay Campus Site; and (2) New Hospital at Mount Zion Campus Site. *Id*.

The reasons provided for dismissing the alternative of a new hospital at Mission Bay comes down to the alternative's purported failure to meet every focused Project objective and a purported conflict with the 2014 LRDP and CPHP. Specifically, the FEIR, like the DEIR states that the alternative would not meet some of the Project objectives and would conflict with several 2014 LRDP and CPHP objectives including but not limited to adequate space to foster collaboration and to facilitate inter-dependence and connectivity for operational efficiency, adequate clinical and

administrative support and alignment with other programs, increase in beds, and modern industry standards including seismic activity. *See* DEIR, p. 6-55. The discussion concedes that the alternative would reduce significant wind, cultural, and construction impacts, but that in doing so, it would likely also result in increased cross town traffic between the Parnassus and Mission Bay campus sites. However, the discussion failed to analyze a combination of a smaller, new hospital at Parnassus in combination with Mission Bay, which is a feasible option that has the potential to address total need and allow phasing to accommodate patients and services. The EIR's justification for dismissing this alternative is not justified. First, the alternative would meet most of the Project's objectives. Second, the argument that the alternative would increase cross-town traffic is not supported by any evidence or analysis. Lastly, the conflicts with the 2014 LRDP are not persuasive since that document is being amended to break the space ceiling and this alternative would not require that significant amendment to the LRDP. "In fact, the Mission Bay Hospital was justified in part by the development cap at the Parnassus Campus." This alternative must be fully analyzed in a revised and recirculated DEIR, including additional facts and analysis to support the arguments concerning the alternatives analysis.

The FEIR, like the DEIR also dismisses the alternative of a new hospital at the Mount Zion Campus Site without actually analyzing the alternative, stating that it "would be less than ideal and inefficient" to have UCSF hospitals at three different sites, and that it would not help achieve the benefits realized through interdisciplinary collaboration and convergence between clinical care, research and education, land acquisition would be difficult, and citing undisclosed conflicts with the 2014 LRDP and CPHP objectives. DEIR, p. 6-57. Locating the proposed hospital at the Mount Zion campus would "reduce the significant wind impact . . ., avoid demolition of the LPPI (individually eligible for listing in the National and California Registers), and avoid a number of temporary construction and operational impacts associated with the New Hospital at the Parnassus Heights campus site." *Id*. The Mount Zion campus site is 2 miles from the Parnassus campus site and several of the existing buildings, including the hospital, must be retrofitted or demolished due to seismic issues. *See* UCSF 2014 LRDP, p. 89. The 2014 LRDP even states that the demolition of outdated and seismically compromised buildings would allow for the construction of new space to accommodate clinical programs at the Parnassus site. *Id*. at 91. The FEIR must analyze the feasibility of this alternative due and compare it with the other identified alternatives.

Rejection of the Mission Bay and Mount Zion sites for a new hospital, either in lieu of or in combination with a smaller hospital at the Parnassus campus, is not supported by the evidence and analysis provided and both require full analyses in a revised and recirculated DEIR.

Lastly, the FEIR and DEIR also fail to mention their Hunters Point site. UCSF owns 3.8 acres in Hunters Point with two single story buildings used for an animal care facility. UCSF 2014 LRDP, p. 117. At the time the 2014 LRDP was published, the City

had approved the Candlestick-Hunters Point Shipyard Development Plan, an extensive mixed-use redevelopment plan for the area that would include housing, retail, office, commercial, industrial, and open use spaces. *See id*. Because UCSF's facilities at this site are in relatively poor condition, UCSF was exploring the possible relocation of those functions and occupants and potential relinquishment of the site. *Id*. However, healthcare, a hospital, and economic development would be greatly needed in this community, especially with the progression of the Candlestick-Hunters Point Shipyard Development Plan. Since UCSF does not have future plans for this site, it should consider the feasibility of locating a portion of the proposed Project at this location.

The FEIR rejects many of the off-site alternatives because they are off-site. This makes a mockery of CEQA's requirement for consideration of off-site alternatives. The courts have held that if environmentally superior alternative sites are available for a project, it would be inconsistent with CEQA's purposes to ignore off-site alternatives simply because on-site alternatives have been considered. In *Citizens of Goleta Valley v Board of Supervisors* (1988) 197 Cal.App.3d 1167, 1179 (*Goleta I*), the court held that the EIR for a proposed resort hotel should have considered alternative locations for the project. Observing that the public need for the hotel should be served at minimal environmental expense, the court concluded that "[r]eason requires that the agency charged with the duty to protect the environment compare impacts at feasible alternative locations." 197 Cal.App.3d at 1180. If off-site alternatives can be rejected simply because they are off-site, then the CEQA requirement for analysis of off-site alternatives becomes meaningless. A revised draft EIR is required to analyze and consider the above alternatives and to select the environmentally superior alternative unless it is truly infeasible.

F. The FEIR Fails to Adequately Respond to Expert Comments.

Commenters submitted extensive expert comments on the DEIR. The FEIR largely ignores these comments, or simply provides inadequate, perfunctory, of false and inaccurate responses to these expert comments. As such, the FEIR fails to comply with CEQA, which requires that the FEIR must include a "detailed" written response to all "significant environmental issues" raised by commenters. *City of Long Beach v. LA USD* (2009) 176 Cal.App.4th 889, 904.

1. FEIR Fails to Adequately Respond to Biological Resources Comments of Dr. Shawn Smallwood, Ph.D.

Wildlife biologist, Dr. Shawn Smallwood, Ph.D, submitted extensive comment on the DEIR, concluding that the Project site contains 47 species of special status species, and concluding that the Project would adversely affect these species by posing risks of window collisions, and destroying habitat. Dr. Smallwood has provided supplemental comments explaining that the FEIR ignores or mischaracterizes or fails to adequately respond to most of his comments.

In particular, the FEIR only analyzes six of the 47 species identified by Dr. Smallwood. Thus, for the remaining 41 species there is no response at all. Dr. Smallwood proposed a very feasible mitigation measure that UCSF should implement San Francisco's bird-safe window treatments. UCSF refuses, arguing that it is not legally required to comply with San Francisco's requirements. This misses the point. The measures are clearly "feasible" since they are required throughout San Francisco. CEQA requires the agency to implement all feasible mitigation measures, regardless of whether those measures are legally required. See, *Covington v. Great Basin Unified Air Pollution Control Dist*., 43 Cal. App. 5th 867 (2019). UCSF seems to misunderstand the most basic requirements of CEQA.

Dr. Smallwood's attached comment letter discusses in detail the inadequacy of the FEIR's response to his comments on the DEIR. (Exhibit C). Dr. Smallwood's comments are incorporated herein in their entirety.

2. FEIR Fails to Adequately Respond to Comments of Urban Planner Terrell Watt.

Certified Urban Planner Terrell Watt submits comments concluding that the FEIR fails to adequately respond to her comments on the DEIR. Most obviously, the FEIR contends that the Project will have no significant aesthetic impacts despite detailed visual and shadow analysis provided by Watt showing that the Project will block views or Mount Sutro from many public places, will cast shadows deep into Golden Gate Park and other public spaces, and will tower over the neighboring residential community of one and two story homes. In short, it simply does not pass the "straight-face-test" for the FEIR to contend that placing a 300-foot-tall skyscraper in the middle of a two-story residential neighborhood has absolutely no aesthetic impacts. In legal parlance, the FEIR provides no substantial evidence to rebut the expert evidence presented on the Project's significant aesthetic impacts.

Watt pointed out in her DEIR comments that the Project exceeds otherwise applicable height limits imposed by the General Plan and Zoning code, violates shadow CEQA significance thresholds, and violates CEQA guidance concerning public views. The FEIR primarily argues that the Project will not have significant aesthetic impacts because UCSF is constitutionally not required to comply with the local zoning and general plan. This argument misses the point entirely. The exceedance of these objective standards indicates a significant impact under CEQA, regardless or whether UC is legally required to comply with those standards. CEQA significance thresholds are indications of significant impacts, not binding legal requirements. For example, exceedance Air District air quality thresholds indicate a significant impacts, despite the fact that it is perfectly legal to emit levels of pollution in excess of those thresholds. The exceedance means that the impact must be disclosed and analyzed as a significant impact in a CEQA document – even if the project ultimately emits pollution in excess of

those thresholds. (See, *Schenck v. County of Sonoma* (2011) 198 Cal.App.4th 949, 960 (County applies BAAQMD's "published CEQA quantitative criteria" and "threshold level of cumulative significance"); *Communities for a Better Environment v. California Resources Agency* (2002) 103 Cal.App.4th 98, 110-111 ("A 'threshold of significance' for a given environmental effect is simply that level at which the lead agency finds the effects of the project to be significant"); *Communities for a Better Environment v. South Coast Air Quality Management Dist.* (2010) 48 Cal.4th 310, 327 ("As the [South Coast Air Quality Management] District's established significance threshold for NOx is 55 pounds per day, these estimates [of NOx emissions of 201 to 456 pounds per day] constitute substantial evidence supporting a fair argument for a significant adverse impact"). The General Plan and Zoning codes provide object standards, the exceedance of which indicates a significant impact that must be disclosed, analyzed and mitigated in an RDEIR – regardless of whether UC is legally required to comply with those objective standards.

Furthermore, the FEIR misses the point that aesthetic impacts may be significant even if there are no objective standards and no binding legal requirements. "We further conclude it is inherent in the meaning of the word 'aesthetic [sic] 'that any substantial, negative effect of a project on view and other features of beauty could constitute a 'significant' environmental impact under CEQA." *Quail Botanical Gardens v. Encinitas*, 35 Cal. Rptr.2d 470, 475 (1994). In Quail, a residential project was found to have significant aesthetic impacts because it was visible from a public botanical garden. In *Ocean View Estates Homeowners Assn., Inc. v. Montecito Water Dist.,* 116 Cal. App. 4th 396, (2004) a proposed cover for a water reservoir had significant visual impacts because it was visible from a public hiking trail. Neither of these cases involved any objective standards or legally binding requirements. Thus, the FEIR's argument that the Project has no significant aesthetic impacts because the City's land use and zoning requirements are not binding on UC has no merit. By refusing to analyze aesthetic impacts based on this species and legally erroneous argument UCSF has failed to proceed in a manner required by law.

3. FEIR Fails to Adequately Respond to Comments of Soil Water Air Protection Enterprise.

Dr. Paul Rosenfeld, Ph.D., and hydrogeologist Matthew Hagemann, C.Hg., of environmental consulting firm Soil, Water, Air Protection Enterprise (SWAPE), submitted extensive comments on the DEIR. As explained below and in SWAPE's forthcoming written comments, the FEIR fails to adequately respond to SWAPE's comments on the DEIR.

- Unsubstantiated Utility Company and Intensity Factors: As discussed in SWAPE's September 10, 2020 comment letter, the DEIR's CalEEMod model included incorrect operational land use types and sizes. Review of the FEIR demonstrates that the Project still fails to justify or correct these modeling errors.

As such, SWAPE reiterates the September 10th comment that the Project's air quality analysis should not be relied upon.

- Failure to Include All Proposed Land Uses: As discussed in SWAPE's September 10th comment letter, the DEIR failed to evaluate emissions associated with the proposed temporary construction office. Review of the FEIR demonstrates that the Project still fails to justify or correct this error. As such, SWAPE reiterates the September 10th comment that the Project's air quality analysis should not be relied upon.

- Incorrect Operational Land Use Types & Sizes: As discussed in SWAPE's September 10th comment letter, the DEIR's CalEEMod model included incorrect operational land use types and sizes. Review of the FEIR demonstrates that the Project still fails to justify or correct these modeling errors. As such, SWAPE reiterates the September 10th comment that the Project's air quality analysis should not be relied upon.

- Unsubstantiated Changes to Construction Phase Lengths: As discussed in SWAPE's September 10th comment letter, the DEIR's CalEEMod model included unsubstantiated changes to the Project's individual construction phase lengths. Review of the FEIR demonstrates that the Project still fails to justify or correct this modeling error. As such, SWAPE reiterates the September 10th comment that the Project's air quality analysis should not be relied upon.

- Unsubstantiated Changes to Consumer Product Emission Factors: As discussed in SWAPE's September 10th comment letter, the DEIR's CalEEMod model included unsubstantiated changes to the consumer product emission factors. Review of the FEIR demonstrates that the Project still fails to justify or correct this modeling error. As such, SWAPE reiterates the September 10th comment that the Project's air quality analysis should not be relied upon.

- Diesel Particulate Matter Health Risk Emissions Inadequately Evaluated: As discussed in SWAPE's September 10th comment letter, the DEIR conducted multiple HRAs for each component of the Project and evaluated them based on the BAAQMD threshold of 10 in one million ***separately***. Furthermore, the DEIR's operational HRA only evaluated TAC emissions associated with emergency generators required for RAB operation. The FEIR fails to justify this incorrect analysis, and as a result, SWAPE reiterates the September 10th comment that the DEIR failed to adequately evaluate the Project's DPM emissions.

- Incorrect and Unsubstantiated Analysis of Emissions: As discussed in SWAPE's September 10th comment letter, the DEIR's quantitative GHG analysis relies upon an incorrect and unsubstantiated air model. As discussed above, SWAPE reiterates the September 10th comments regarding the unsubstantiated input

parameters used to model the Project's GHG emissions. As such, we will reiterate our September 10th comment regarding the Project's underestimated GHG emissions estimates.

- Incorrect Reliance upon CARB's 2017 Scoping Plan: As discussed in SWAPE's September 10th comment letter, the DEIR failed to demonstrate that the Project would be consistent with CARB's 2017 Scoping Plan. SWAPE reiterates this comment, as well as evaluate the Project's consistency with CARB's 2017 Scoping Plan based on the performance-based standards under CARB's 2017 Scoping Plan.

- Failure to Implement All Feasible Mitigation Measures: SWAPE proposes numerous feasible mitigation measures to reduce the Project's air pollution impacts. The FEIR fails to require implementation of these feasible measures, and fails to provide substantial evidence that the measures are infeasible. Therefore, the EIR fails to meet the requirements of CEQA, and the Regents are legally precluded from adopting a statement of overriding considerations. A statement of overriding considerations may only be adopted after the agency imposes all feasible mitigation measures. Since the Regents have failed to impose all feasible mitigation meausres, they may not adopt a statement of overriding considerations, may not certify the EIR, and may not approve the Project. *Covington v. Great Basin Unified Air Pollution Control Dist*., 43 Cal. App. 5th 867, 256 Cal. Rptr. 3d 902 (2019).

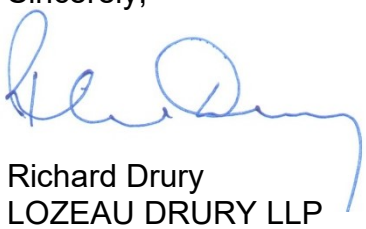
V. UCSF SHOULD PREPARE AND RECIRCULATE A REVISED DEIR

A RDEIR should be prepared and circulated for full public review to address the impacts identified above and to propose feasible mitigation measures. CEQA requires re-circulation of an EIR when significant new information is added to the EIR following public review but before certification. (Pub. Res. Code § 21092.1.) The CEQA Guidelines clarify that new information is significant if "the EIR is changed in a way that deprives the public of a meaningful opportunity to comment upon a substantial adverse environmental effect of the project" including, for example, "a disclosure showing that . . . [a] new significant environmental impact would result from the project." (14 CCR § 15088.5.) The above significant environmental impacts have not been analyzed in the EIR and must be addressed in an RDEIR that is re-circulated for public review.

VI. CONCLUSION

For the foregoing reasons, PNC believes that the FEIR for the UCSF Comprehensive Parnassus Heights Plan is wholly inadequate and urges the Regents to require a Revised Draft EIR to be prepared to address the concerns raised herein. Thank you for considering our comments and please include this letter in the record of proceedings for this project.

Sincerely,



Richard Drury
LOZEAU DRURY LLP

EXHIBIT A

Massive Expansion at UCSF: Don't break the promise at Parnassus

Published by Parnassus Neighborhood Coalition on 2nd Jan 2021

Don't let UCSF break its promise and rush through a MASSIVE EXPANSION of its UCSF Parnassus campus as soon as January 21!

They want a 300-foot tower, 8,000 new employees and 2 million additional square feet of new space -- SalesForce Tower and Transamerica Pyramid combined!

Studies show it will overload transit, skyrocket housing costs, reduce open space, shadow our parks and neighborhoods, and increase the risk of cancer.

The plan breaks their own promise -- since 1976 -- establishing a permanent space cap of 3.55 million square feet at the Parnassus campus.

Despite the pandemic which has limited community input, UCSF is attempting to rush approval of its plans without all San Franciscans being heard.

We, the undersigned, call on the UC Board of Regents to delay approval of their expansion plan to allow meaningful community input, negotiate a fair Memorandum of Understanding with San Francisco to ensure adequate community benefits, and adhere to the 3.55 million permanent space cap as promised to the neighborhood for over 44 years.

Appendix O-SM

#	First name	Last name	Date
1	Art	Agnos	Jan 03, 2021
2	Joan	Downey	Jan 03, 2021
3	Mary ann	De Souza	Jan 03, 2021
4	Karen	Crommie	Jan 04, 2021
5	James	Stearns	Jan 04, 2021
6	carole	glosenger	Jan 05, 2021
7	Megan	Gibes	Jan 05, 2021
8	Bob	Goodman	Jan 05, 2021
9	Joseph	Cain	Jan 05, 2021
10	Chunming	Wen	Jan 05, 2021
11	Michael	O'Callaghan	Jan 05, 2021
12	Karen	Offereins	Jan 05, 2021
13	John	Reece	Jan 05, 2021
14	John	Bankston	Jan 05, 2021
15	Barbara	Antonucci	Jan 05, 2021
16	Amelia	Antonucci	Jan 05, 2021
17	Karen	Leigh	Jan 05, 2021
18	Mark	Donahue	Jan 05, 2021
19	mark	klarenbach	Jan 05, 2021
20	Sarah	Van Dyck	Jan 05, 2021
21	Vanessa	Fabian	Jan 05, 2021
22	Greta	Alexander	Jan 05, 2021
23	Shannon	Sinclair	Jan 05, 2021
24	Traci	Ramos	Jan 05, 2021
25	Cecilia	Weinberger	Jan 05, 2021
26	Michael	Hinckley	Jan 05, 2021
27	Jon	Wurfl	Jan 05, 2021
28	Daragh	Moran	Jan 05, 2021
29	Danna	Alexander	Jan 05, 2021
30	Brian	Berger	Jan 05, 2021
31	Makenna	Johnstone	Jan 05, 2021
32	Raphael	Merriman	Jan 05, 2021
33	Blake	Winkley	Jan 05, 2021
34	Erin	Cooney	Jan 05, 2021
35	Katlin	Smith	Jan 05, 2021
36	Midori	Wada	Jan 05, 2021
37	Kayla	Odom	Jan 05, 2021
38	Champa	Gujjanudu	Jan 05, 2021
39	Richard	Palazzolo	Jan 05, 2021
40	Theresa	Pappas	Jan 05, 2021
41	Jason	Alexander	Jan 05, 2021
42	India	Kieser	Jan 05, 2021
43	Finn	Black	Jan 05, 2021

#	First name	Last name	Date
44	Ed	Leonard	Jan 05, 2021
45	ANTOINETTE	GUTIERREZ	Jan 05, 2021
46	MICHAEL	GUTIERREZ	Jan 05, 2021
47	J	Finn	Jan 05, 2021
48	Chris	Hock	Jan 05, 2021
49	Emma	Maul	Jan 05, 2021
50	Donna	Deng	Jan 06, 2021
51	Chelsea	de Goede	Jan 06, 2021
52	Catherine	Jones	Jan 06, 2021
53	Richard	Magary	Jan 06, 2021
54	Diana	Chan	Jan 06, 2021
55	Tamara	Hinckley	Jan 06, 2021
56	Sherri	Sheridan	Jan 06, 2021
57	Erin	Clarke	Jan 06, 2021
58	Shivraj	Singh	Jan 06, 2021
59	Lisa	Kessler	Jan 06, 2021
60	Marian	Baldauf	Jan 06, 2021
61	Liesl	Baldauf	Jan 06, 2021
62	Fritz	Baldauf	Jan 06, 2021
63	Ali	Saraceni	Jan 06, 2021
64	Mary	DeVries	Jan 06, 2021
65	John	Saia	Jan 06, 2021
66	Sarah	Smith	Jan 06, 2021
67	Jason	Jones	Jan 06, 2021
68	Rebecca	Cohn	Jan 06, 2021
69	Sergey	Maslennikov	Jan 06, 2021
70	Annu	Kath	Jan 06, 2021
71	Laura	Wilder	Jan 06, 2021
72	Hannah	Beatty	Jan 06, 2021
73	Kristina	Petrakis	Jan 06, 2021
74	Lawrence	Petrakis	Jan 06, 2021
75	ourania	petrakis	Jan 06, 2021
76	Danae	Petrakis	Jan 06, 2021
77	Megan	Cohn	Jan 06, 2021
78	Charles	Leonard	Jan 06, 2021
79	Erin	Bellsey	Jan 06, 2021
80	Irene	Lee	Jan 06, 2021
81	Lance	Lee	Jan 06, 2021
82	Alex	Lee	Jan 06, 2021
83	Caleb	Lee	Jan 06, 2021
84	Sami	Lee	Jan 06, 2021
85	Ernie	Wieler	Jan 06, 2021
86	john and linda	robel	Jan 06, 2021

#	First name	Last name	Date
87	Katya	Miller	Jan 06, 2021
88	James	Sandler	Jan 06, 2021
89	Logan	Craig	Jan 06, 2021
90	Michelle	Yoon	Jan 06, 2021
91	Lee	Martin	Jan 06, 2021
92	Gretchen	Sandler	Jan 06, 2021
93	bill	o'brien	Jan 06, 2021
94	Margaret	Boyer	Jan 06, 2021
95	Brooke	Carpenter	Jan 06, 2021
96	Anna	Boyer	Jan 06, 2021
97	William	Leonard	Jan 06, 2021
98	Heather	Leonard	Jan 06, 2021
99	Anne	Leonard	Jan 06, 2021
100	John	Nickel	Jan 07, 2021
101	Nancy	Keane	Jan 07, 2021
102	Lori	Liederman	Jan 07, 2021
103	Emma	Stearns	Jan 07, 2021
104	Cynthia	Travis	Jan 07, 2021
105	Susheela	Vasan	Jan 07, 2021
106	Nettie	Gardner	Jan 07, 2021
107	Tes	Welborn	Jan 07, 2021
108	Leah	Sandler	Jan 07, 2021
109	Chuck	Gardner	Jan 07, 2021
110	Edward	Cotsen	Jan 07, 2021
111	Theodore	Barger	Jan 07, 2021
112	Matthew	Heiden	Jan 07, 2021
113	Emily	Cohn	Jan 07, 2021
114	Nicole	Bonadonna	Jan 08, 2021
115	Marisa	Rodriguez	Jan 08, 2021
116	Lino Cortina	Cortina	Jan 08, 2021
117	Martin	Cohn	Jan 08, 2021
118	Richard	Ciccarone	Jan 08, 2021
119	Melvin	Chevalier	Jan 08, 2021
120	Ellen	Price	Jan 08, 2021
121	John	MacGregor	Jan 08, 2021
122	Erich	Stratmann	Jan 08, 2021
123	Castigliana	Cimpian	Jan 08, 2021
124	Dylan	morse	Jan 08, 2021
125	Peter	Boyer	Jan 08, 2021
126	Crow	Fromm	Jan 08, 2021
127	John	Verdoia	Jan 08, 2021
128	Mary	Ross	Jan 08, 2021
129	Dominic	Ryan	Jan 08, 2021

#	First name	Last name	Date
130	Brittany	McBride	Jan 08, 2021
131	Scott	Kincaid	Jan 08, 2021
132	Gabrielle	Craig	Jan 08, 2021
133	Carole	Craig	Jan 08, 2021
134	Victor	White	Jan 08, 2021
135	Tanya	Vlach	Jan 08, 2021
136	Mitchell	Yang	Jan 08, 2021
137	Lisa	Blanchard	Jan 08, 2021
138	Joseph	Roby	Jan 08, 2021
139	David	Santoscucalon	Jan 08, 2021
140	Stephen	Lichty	Jan 08, 2021
141	Carmen	Johns	Jan 08, 2021
142	Minerva	Novoa	Jan 08, 2021
143	Jim	Iwersen	Jan 08, 2021
144	James	Mayagoitia	Jan 08, 2021
145	Lee	Rome	Jan 08, 2021
146	Cat	Stevans	Jan 08, 2021
147	Crystal	Higgins	Jan 08, 2021
148	Mandy	Ta	Jan 08, 2021
149	Stella	Kim	Jan 08, 2021
150	Joseph	Shemuel	Jan 08, 2021
151	Jose	Cantu	Jan 08, 2021
152	David	Simpson	Jan 08, 2021
153	Sajida	Kaliyadan	Jan 08, 2021
154	Andrew	Schanbacher	Jan 08, 2021
155	Rupert	Grimm	Jan 08, 2021
156	Alex	Burkowsky	Jan 08, 2021
157	Stephanie	McMurray	Jan 08, 2021
158	David	Fitoussi	Jan 08, 2021
159	Jennifer	Bishop	Jan 08, 2021
160	Silvia	Cuadra	Jan 08, 2021
161	Maya	Argaman	Jan 08, 2021
162	Alexander	Bouskos	Jan 08, 2021
163	Jean	Lee	Jan 08, 2021
164	Keani	Flores-Solano	Jan 08, 2021
165	Eric	Kramp	Jan 08, 2021
166	Joseph	Dinh	Jan 08, 2021
167	Amiee	Nishimoto	Jan 08, 2021
168	Minela	Arnautovich	Jan 08, 2021
169	Philippe	Sanchez	Jan 08, 2021
170	Nicolai	Stromboli	Jan 08, 2021
171	James	Prial	Jan 08, 2021
172	Andrew	Szeto	Jan 08, 2021

#	First name	Last name	Date
173	Amie	Nenninger	Jan 08, 2021
174	Claire	Fry	Jan 08, 2021
175	Sandra	Bautista	Jan 08, 2021
176	Savannah	Landau	Jan 08, 2021
177	Jordyn	Cho	Jan 09, 2021
178	olga	shapiro	Jan 09, 2021
179	Michelle	Mongan	Jan 09, 2021
180	Patrick	McCanta	Jan 09, 2021
181	Aleks Nikola	Lapins	Jan 09, 2021
182	Martha	Wasacz	Jan 09, 2021
183	Tony	Gonzales	Jan 09, 2021
184	Ashley	C	Jan 09, 2021
185	Hugh	O'Connor	Jan 09, 2021
186	Michael	Bailey	Jan 09, 2021
187	Thomas	Rosha	Jan 09, 2021
188	Odessa	Sanchez	Jan 09, 2021
189	Cynthia	Smuzynska	Jan 09, 2021
190	Robert	Ferguson	Jan 09, 2021
191	Timothy	Sasaki	Jan 09, 2021
192	Jason	Tran	Jan 09, 2021
193	Stephanie	Blank	Jan 09, 2021
194	Mark	Landerghini	Jan 09, 2021
195	Hasim	Zecic	Jan 09, 2021
196	TIM	Wolfred	Jan 09, 2021
197	maida	taylor	Jan 09, 2021
198	Pam	Cook	Jan 09, 2021
199	Patricia	Whelehan	Jan 09, 2021
200	hisashi	Kitano	Jan 09, 2021
201	Thomas	Tavis	Jan 09, 2021
202	Deborah	Sesich	Jan 09, 2021
203	Wendy	Bauer	Jan 09, 2021
204	Barbara	Demas	Jan 09, 2021
205	Sauro	Giuliani	Jan 09, 2021
206	Julie	Tran	Jan 09, 2021
207	Alex	Kim	Jan 09, 2021
208	Micaela	Harms	Jan 09, 2021
209	Michael	Zelinsky	Jan 09, 2021
210	Dennis	Rogers	Jan 09, 2021
211	Margaret	STARR	Jan 09, 2021
212	Claire	Hudes	Jan 09, 2021
213	Nowell	Valeri	Jan 09, 2021
214	Lucy	Gray	Jan 09, 2021
215	Andrew	Coleman	Jan 09, 2021

#	First name	Last name	Date
216	Heidi	Gorenflo	Jan 09, 2021
217	Marc	Snyder	Jan 09, 2021
218	Elizabeth	De Simone	Jan 09, 2021
219	Mary	Novasic	Jan 09, 2021
220	Glenn	Martin	Jan 09, 2021
221	Leslie	Koelsch	Jan 09, 2021
222	Michael	Dryden	Jan 09, 2021
223	Arlene	Powell	Jan 09, 2021
224	lani	asher	Jan 09, 2021
225	Mimi	Klausner	Jan 09, 2021
226	Delores	Lavin	Jan 09, 2021
227	Megan	TYlor	Jan 09, 2021
228	Adrienne	Kristine	Jan 09, 2021
229	Ralph	Pagano	Jan 09, 2021
230	Ann	Lockett	Jan 09, 2021
231	Sally	Abbott	Jan 09, 2021
232	Janet	Harris	Jan 09, 2021
233	Roberta	Orlando	Jan 09, 2021
234	Karen	lundin	Jan 09, 2021
235	nelson	bloncourt	Jan 09, 2021
236	Johanna	Abate	Jan 09, 2021
237	Dennis	Tsai	Jan 09, 2021
238	Lesley	Stansfield	Jan 09, 2021
239	Terry	McHugh	Jan 09, 2021
240	Linda	Smith	Jan 09, 2021
241	Thomas	Sherwood	Jan 09, 2021
242	Nancy	Montgomery	Jan 09, 2021
243	Tracy	Hicks	Jan 09, 2021
244	Anna	Wong	Jan 09, 2021
245	Maria	Politzer	Jan 09, 2021
246	Louis	Dematteis	Jan 09, 2021
247	Rose	Rosen	Jan 09, 2021
248	Kellin	Defiel-Scudder	Jan 09, 2021
249	Harriet	Leff	Jan 09, 2021
250	Gary	Russ	Jan 09, 2021
251	Bradley	Bettinger MD	Jan 09, 2021
252	Gary	Camozzi	Jan 09, 2021
253	Fr.Stewart	Wilber	Jan 09, 2021
254	Karen	Grimsby	Jan 09, 2021
255	Diana	Cohen Robinson	Jan 09, 2021
256	Elizabeth	Shaw	Jan 09, 2021
257	Sidney J.P.	Hollister	Jan 09, 2021
258	Zoe	McLaughlin	Jan 09, 2021

#	First name	Last name	Date
259	Rosie	Gozali	Jan 09, 2021
260	Andrew	Melomet	Jan 09, 2021
261	Michael	Burnias	Jan 09, 2021
262	Jay	Alexander	Jan 09, 2021
263	Laurie	Farnam	Jan 09, 2021
264	marianna	coolidge	Jan 09, 2021
265	Matt	Osborne	Jan 09, 2021
266	Kendall	Osborne	Jan 09, 2021
267	Iwan	Thomis	Jan 09, 2021
268	James	Parke	Jan 09, 2021
269	Jonathan	Rapp	Jan 09, 2021
270	Wendy	Earl	Jan 09, 2021
271	mose	young	Jan 09, 2021
272	Kevin	Kopjak	Jan 09, 2021
273	Barbara	Applegate	Jan 09, 2021
274	Cristian	Luecke	Jan 09, 2021
275	Kelly	Veilleux	Jan 09, 2021
276	Larry	Burback	Jan 09, 2021
277	Jerry	Goldstone	Jan 09, 2021
278	Athena	Pappas	Jan 09, 2021
279	Michael	LeBoff	Jan 09, 2021
280	henry	milich	Jan 09, 2021
281	richard	chisholm	Jan 09, 2021
282	Ronald	Ward	Jan 09, 2021
283	Teresa	Palmer	Jan 09, 2021
284	Deborah	Grabien	Jan 09, 2021
285	Sara	Meghrouni	Jan 09, 2021
286	Michael	Gertz	Jan 09, 2021
287	William	Petersen	Jan 09, 2021
288	Karl	Cohen	Jan 09, 2021
289	Pam	Rabinowitz	Jan 09, 2021
290	Laura	Fox	Jan 09, 2021
291	Laurie	Gordon	Jan 09, 2021
292	Michael	Kemper	Jan 09, 2021
293	Karen	Ulring	Jan 09, 2021
294	Clara	Evans	Jan 09, 2021
295	Barbara	Spencer	Jan 09, 2021
296	Debra	Riat	Jan 09, 2021
297	Robert	Gillespie	Jan 09, 2021
298	Alicia	Snow	Jan 09, 2021
299	Kay	Klumb	Jan 09, 2021
300	Manisha	Dayal	Jan 09, 2021
301	Bryan	Andrews	Jan 09, 2021

#	First name	Last name	Date
302	Joseph	Zakrzewski	Jan 09, 2021
303	John	Skeels	Jan 09, 2021
304	Pauline	Guadian	Jan 09, 2021
305	Ashleigh	Norman	Jan 09, 2021
306	Carol	Tang	Jan 09, 2021
307	Ira	Kurlander	Jan 09, 2021
308	Nicole	Savage	Jan 09, 2021
309	shelley	de Rouvray	Jan 09, 2021
310	Bethellen	Levitan	Jan 09, 2021
311	Donna	Kline	Jan 09, 2021
312	Susan	Pritzker	Jan 09, 2021
313	Jack	Schumacher	Jan 09, 2021
314	Marilyn	Healy	Jan 09, 2021
315	Tyrone	Dorian	Jan 09, 2021
316	Prabha	Milstein	Jan 09, 2021
317	Gabriel	Vago	Jan 09, 2021
318	Leila	P.	Jan 09, 2021
319	Paul	Van Houten	Jan 09, 2021
320	Marc	Shapiro	Jan 09, 2021
321	Michael	Oxley	Jan 09, 2021
322	Cathy	Cohn	Jan 09, 2021
323	Bradley	Metzler	Jan 09, 2021
324	Keith	Goldstein	Jan 09, 2021
325	Bixby	Hyche	Jan 09, 2021
326	Ed	Shiels	Jan 09, 2021
327	James	Caleshu	Jan 09, 2021
328	Doug	McKirahan	Jan 09, 2021
329	Cherie	Hawkins	Jan 09, 2021
330	Judy	Aune	Jan 09, 2021
331	Cindy	Goldfield	Jan 09, 2021
332	David	Ambruster	Jan 09, 2021
333	Elizabeth	Andrews	Jan 09, 2021
334	Diane	Kurnick	Jan 09, 2021
335	andrea	ajoudani	Jan 09, 2021
336	Andrew	Shahan	Jan 09, 2021
337	Mimi	Haymond	Jan 09, 2021
338	Elizabeth	Mayer	Jan 09, 2021
339	Laura	Gilmore	Jan 09, 2021
340	Emma	Hanley	Jan 09, 2021
341	CARMEN	FLORES	Jan 09, 2021
342	Hayward	Maben	Jan 09, 2021
343	Mary	Ricci	Jan 09, 2021
344	Kathleen	Vare	Jan 09, 2021

#	First name	Last name	Date
345	Roy	Wood	Jan 09, 2021
346	Mahendra	R	Jan 09, 2021
347	Donald C.	Bliss	Jan 09, 2021
348	dale	riehart	Jan 09, 2021
349	Christine	Arata	Jan 09, 2021
350	Elizabeth	Zlatchin	Jan 09, 2021
351	Brian	Tuohy	Jan 09, 2021
352	David	Rieker	Jan 09, 2021
353	Monica	DuClaud	Jan 09, 2021
354	Ariane	Eroy, Ph. D.	Jan 09, 2021
355	Jennifer	Dumpert	Jan 09, 2021
356	Jennifer	Kroot	Jan 09, 2021
357	victor	antonetti	Jan 09, 2021
358	Linda	Dragavon	Jan 09, 2021
359	Elizabeth	Leaf	Jan 09, 2021
360	Roy	Jorge	Jan 09, 2021
361	Marcia	Sanchez	Jan 09, 2021
362	Kim	Tran	Jan 09, 2021
363	Allyson	Bishop	Jan 09, 2021
364	Rina	Weisman	Jan 09, 2021
365	Donald	Hilla	Jan 09, 2021
366	paul	magnuson	Jan 09, 2021
367	Elizabeth	Gould	Jan 09, 2021
368	Gregory	Blum	Jan 09, 2021
369	ANNE	VERGA	Jan 09, 2021
370	Andrea	Mravca	Jan 09, 2021
371	Gerard	Padilla	Jan 09, 2021
372	Megan	Myall	Jan 09, 2021
373	Marina	Bacchetti	Jan 09, 2021
374	Stephen	Somerstein	Jan 09, 2021
375	Rick	Lasquete	Jan 09, 2021
376	Elizabeth	Brooking	Jan 09, 2021
377	Mabel	Valdiviezo	Jan 09, 2021
378	Deborah	Acres	Jan 09, 2021
379	Michael	Beatty	Jan 09, 2021
380	Lori	S.	Jan 09, 2021
381	Michael	Kirby	Jan 09, 2021
382	Sue	Blankman	Jan 09, 2021
383	Linda	Klann	Jan 09, 2021
384	J.L.	Carpenter	Jan 09, 2021
385	Maria	Morse	Jan 09, 2021
386	Daniel	Landry	Jan 09, 2021
387	Roger	Kohler	Jan 09, 2021

#	First name	Last name	Date
388	Galen	Workman	Jan 09, 2021
389	Lara	Klemens	Jan 09, 2021
390	Elise	Stupi	Jan 09, 2021
391	John	Lowell	Jan 09, 2021
392	hilary	hedden	Jan 09, 2021
393	Doug	Woods	Jan 09, 2021
394	Sherri	Samu	Jan 09, 2021
395	Karina	Vallee	Jan 09, 2021
396	Sean	San Jose	Jan 09, 2021
397	Katy	Mooney	Jan 09, 2021
398	Jessica	Ainsworth	Jan 09, 2021
399	Naomi	Lochner	Jan 09, 2021
400	anne	veraldi	Jan 09, 2021
401	Alexander	Grossman	Jan 09, 2021
402	Jamie	Lopez	Jan 09, 2021
403	Kevin	Barnard	Jan 09, 2021
404	Jacqueline	Ivens	Jan 09, 2021
405	Kelvin	Quan	Jan 09, 2021
406	Sara	McGhie	Jan 09, 2021
407	Vicki	Olds	Jan 09, 2021
408	David	Parkinson	Jan 10, 2021
409	Angela	Solleder	Jan 10, 2021
410	Ryan	Miller	Jan 10, 2021
411	Ashley	Pollack	Jan 10, 2021
412	Daniel	Buckley	Jan 10, 2021
413	Troy	Ward	Jan 10, 2021
414	John	Hilton	Jan 10, 2021
415	Jennifer	Bagheri	Jan 10, 2021
416	Susan	Detwiler	Jan 10, 2021
417	Ken	Spielman	Jan 10, 2021
418	Violet	Casteel	Jan 10, 2021
419	Jason	Stiles	Jan 10, 2021
420	Beth	Middleworth	Jan 10, 2021
421	Ellen	Reller	Jan 10, 2021
422	crystal	wong	Jan 10, 2021
423	Steve	Labrum	Jan 10, 2021
424	Paul	Meredith	Jan 10, 2021
425	Tamara	Little	Jan 10, 2021
426	Jeromy	Carpenter	Jan 10, 2021
427	Lynn	Tsoflias	Jan 10, 2021
428	Cris	Pond	Jan 10, 2021
429	Michal	Habdank-Kolaczkowski	Jan 10, 2021
430	Henry	Williams	Jan 10, 2021

#	First name	Last name	Date
431	Eileen	Quan	Jan 10, 2021
432	meg	messina	Jan 10, 2021
433	Rebecca	Gomez	Jan 10, 2021
434	Carey	White	Jan 10, 2021
435	Arlen	McCluskey	Jan 10, 2021
436	Susan	St Martin	Jan 10, 2021
437	Janet	Lohr	Jan 10, 2021
438	Anastasia	Glikshtern	Jan 10, 2021
439	Anton	Kalafati	Jan 10, 2021
440	Eugene	Bachmanov	Jan 10, 2021
441	Peter	Glikshtern	Jan 10, 2021
442	James	Lansing	Jan 10, 2021
443	Andrea	Cross	Jan 10, 2021
444	Rukshan	Bhaisa	Jan 10, 2021
445	Emily	Wei	Jan 10, 2021
446	Chris	PAILLART	Jan 10, 2021
447	Elaine	Lee	Jan 10, 2021
448	Rebecca	Perlmutter	Jan 10, 2021
449	Sasha	Gala	Jan 10, 2021
450	Rebecca	Lee	Jan 10, 2021
451	Ashley	Louie	Jan 10, 2021
452	Josh	Decker	Jan 10, 2021
453	Louise	Brodie	Jan 10, 2021
454	Brandon	Keefe	Jan 10, 2021
455	Jenifer	Twiford	Jan 10, 2021
456	Meriwether Fay	McGettigan	Jan 10, 2021
457	Mike	Knapp	Jan 10, 2021
458	Andy	Gillis	Jan 10, 2021
459	Robert	Buehl	Jan 10, 2021
460	Chelsea	Yanez	Jan 10, 2021
461	Jeremy	Becker	Jan 10, 2021
462	PERRY	LITTRELL	Jan 10, 2021
463	Jason	Lee	Jan 10, 2021
464	JULIA	ROCKWELL	Jan 10, 2021
465	Sam	Fairchild	Jan 10, 2021
466	Jody	Meister	Jan 10, 2021
467	Andrea	Kennedy	Jan 10, 2021
468	Nancy	Tompkins	Jan 10, 2021
469	Erin	Heimbinder	Jan 10, 2021
470	Micah	Ikemire	Jan 10, 2021
471	laarry	marty	Jan 10, 2021
472	Brenda	Hatley	Jan 10, 2021
473	Jamison	Litten	Jan 10, 2021

#	First name	Last name	Date
474	Erika	Hannes	Jan 10, 2021
475	Jenna	Milligan	Jan 10, 2021
476	C	Chamberlayne	Jan 10, 2021
477	Emily	Foley	Jan 10, 2021
478	Dave	Nicholson	Jan 10, 2021
479	Zona	Pan	Jan 10, 2021
480	Barry	Williams	Jan 10, 2021
481	Glenn	D	Jan 10, 2021
482	Ed	Shapiro	Jan 10, 2021
483	Sophie	Taggart	Jan 10, 2021
484	Reid	Coggins	Jan 10, 2021
485	Dina	Beigelman	Jan 10, 2021
486	Lisa	Ali	Jan 10, 2021
487	nic	griffin	Jan 10, 2021
488	Gary	Moran	Jan 10, 2021
489	Miglena	Dimitrova	Jan 10, 2021
490	Maaike	Evers	Jan 10, 2021
491	Aimeelene	Gaspar	Jan 10, 2021
492	carter	Graham	Jan 10, 2021
493	Brett	M	Jan 10, 2021
494	Chelsea	Mariotti	Jan 10, 2021
495	Jordan	Paxhia	Jan 10, 2021
496	Victoria	Scott	Jan 10, 2021
497	Alan	Joyce	Jan 10, 2021
498	Kathryn	Hass	Jan 10, 2021
499	Lisa	Fox	Jan 10, 2021
500	Stephanie	Hilborn	Jan 10, 2021
501	Brian	Luenow	Jan 10, 2021
502	Paul	Guercio	Jan 10, 2021
503	Tiina	Sepp	Jan 10, 2021
504	Benjamin	Dyer	Jan 10, 2021
505	Cecilia	Culverhouse	Jan 10, 2021
506	Doris	Spitzig	Jan 10, 2021
507	Marc	Adelman	Jan 10, 2021
508	June	Kim	Jan 10, 2021
509	Jennifer	Stella	Jan 10, 2021
510	Jean	Audet	Jan 10, 2021
511	Annie	Yum	Jan 10, 2021
512	Frances	Takahashi	Jan 10, 2021
513	Gregory	Coyle	Jan 10, 2021
514	Luisa Maria	Conroy	Jan 10, 2021
515	Gregory	Farley	Jan 10, 2021
516	Joel	Rubinstein	Jan 10, 2021

#	First name	Last name	Date
517	Anna	Spektor	Jan 10, 2021
518	Matthew L	Sanlim	Jan 10, 2021
519	Max	Carlson	Jan 10, 2021
520	Christopher	Vogt	Jan 10, 2021
521	Oren	Frey	Jan 10, 2021
522	Ashley	Bernon	Jan 10, 2021
523	Lauren	Peters Lague	Jan 10, 2021
524	Juliana	Froggatt	Jan 10, 2021
525	Sue	Eich	Jan 10, 2021
526	Lisbit	Bailey	Jan 10, 2021
527	Peter	Dumas	Jan 10, 2021
528	Nicholas	Germanacos	Jan 10, 2021
529	Jeff	Caves	Jan 10, 2021
530	George	Gries	Jan 10, 2021
531	Gail	McGowan	Jan 10, 2021
532	Anna	Shurter	Jan 10, 2021
533	Selina	Keene	Jan 10, 2021
534	Sharon F	Piansay	Jan 10, 2021
535	joan	frey	Jan 10, 2021
536	Alexandra	Warlen	Jan 10, 2021
537	Tina	Estoque	Jan 10, 2021
538	Ozzie (Auzie)	Rohm (Mirhashemi)	Jan 10, 2021
539	Serena	McNair	Jan 10, 2021
540	Christina	Devling	Jan 10, 2021
541	Robert	Berman	Jan 10, 2021
542	Julia	Cutts	Jan 10, 2021
543	Sara	Rhodes	Jan 10, 2021
544	Sandesh	Nicol	Jan 10, 2021
545	Ben	Dennis	Jan 10, 2021
546	Steve	Firestone	Jan 10, 2021
547	Paul	Merlin	Jan 10, 2021
548	Merel	Glaubiger	Jan 10, 2021
549	Anne	Kroger	Jan 10, 2021
550	Teagan	Thompson	Jan 10, 2021
551	Michael	Hirsch	Jan 10, 2021
552	Gail	Barksdale	Jan 10, 2021
553	nicole	lambrou	Jan 10, 2021
554	Savannah	Schoelen	Jan 10, 2021
555	Erica	Gies	Jan 10, 2021
556	Eleni	Mavros	Jan 10, 2021
557	sharon	snider	Jan 10, 2021
558	Toni	Parks	Jan 10, 2021
559	Theodore	Rohm	Jan 10, 2021

#	First name	Last name	Date
560	Jason	Garoutte	Jan 10, 2021
561	Isabel	Rosenstock	Jan 10, 2021
562	Bridget	Botelho	Jan 10, 2021
563	Margaux	Sleckman	Jan 10, 2021
564	Michael	Bachand	Jan 10, 2021
565	John	Splink	Jan 10, 2021
566	Tahra	Soofi	Jan 10, 2021
567	Peter	DeYoung	Jan 10, 2021
568	Susan	Pinto	Jan 10, 2021
569	Meg	White	Jan 10, 2021
570	Natalie	Waugh	Jan 10, 2021
571	Kathy	Kojimoto	Jan 10, 2021
572	Ben	Appenzeller	Jan 10, 2021
573	Larry	Marietta	Jan 10, 2021
574	Karlie	Nieto Lunsford	Jan 10, 2021
575	Danielle	Triantis	Jan 10, 2021
576	Anja	Bircher	Jan 10, 2021
577	Jolynn	Jones	Jan 10, 2021
578	Shirley	Silverstein	Jan 10, 2021
579	Tiffany	Yau	Jan 10, 2021
580	Carrie	Pilto	Jan 10, 2021
581	Noah	Wang	Jan 10, 2021
582	rebecca	haynes	Jan 10, 2021
583	Reed	Rahlmann	Jan 10, 2021
584	Robert	Barron	Jan 10, 2021
585	Elise	Boivin	Jan 10, 2021
586	Irene	Bertolucci	Jan 10, 2021
587	Judy	Chew	Jan 10, 2021
588	Alejandro	Torroella	Jan 10, 2021
589	Madelaine	Robinson	Jan 10, 2021
590	Maile	Smith	Jan 10, 2021
591	Jacqueline	Puliatti	Jan 10, 2021
592	Stephanie	Stroud	Jan 10, 2021
593	Lauren	Slott	Jan 10, 2021
594	Anna	Coronado	Jan 10, 2021
595	Rebecca	Eiseman	Jan 10, 2021
596	Sean	Cole	Jan 10, 2021
597	Amy	Bishop	Jan 10, 2021
598	Anne	Wiley	Jan 10, 2021
599	Marina	Chu	Jan 10, 2021
600	Rahul	Guttal	Jan 10, 2021
601	Mark	Pothier	Jan 10, 2021
602	Khaia	Brogan	Jan 10, 2021

#	First name	Last name	Date
603	Casry	Madden	Jan 10, 2021
604	Annelise	Zamula	Jan 10, 2021
605	Elizabeth	Court	Jan 10, 2021
606	Dean	Schaffer	Jan 10, 2021
607	Tara	McAteer	Jan 10, 2021
608	Giulia	Iaconi-Stewart	Jan 10, 2021
609	Daniel Robert	Burns	Jan 10, 2021
610	Kaia	Jacobi	Jan 10, 2021
611	Ron	Nieberding	Jan 10, 2021
612	Maggie	Lin	Jan 10, 2021
613	M.A.	Kirkwood	Jan 10, 2021
614	Jillian	Fanty	Jan 10, 2021
615	MARGARET	MOSHER	Jan 10, 2021
616	CHRISTINE	CASSIS	Jan 10, 2021
617	Niraj	Jayant	Jan 10, 2021
618	Lisa	Ma	Jan 10, 2021
619	Tiana	Oreglia	Jan 10, 2021
620	Todd	Snyder	Jan 10, 2021
621	Nancy	Edmonson	Jan 10, 2021
622	Beatrice	Kushner	Jan 10, 2021
623	Charles	Fleischmann	Jan 10, 2021
624	Karen	Breslin	Jan 10, 2021
625	Tina	Hardison	Jan 10, 2021
626	Nina	Buzby	Jan 10, 2021
627	Mari	Azizkhanian	Jan 10, 2021
628	Charles	Byrne	Jan 10, 2021
629	Ryan	Pollock	Jan 10, 2021
630	Shaaron	Murphy	Jan 10, 2021
631	Andrew	Leonard	Jan 10, 2021
632	Natalie	Blackman	Jan 10, 2021
633	Feather	Flores	Jan 10, 2021
634	Rachel	Rock	Jan 10, 2021
635	Pardis	Esmaeili	Jan 10, 2021
636	David	Elliott	Jan 10, 2021
637	Myra	Davis	Jan 10, 2021
638	Arnie	Warshaw	Jan 10, 2021
639	Nader	Shabahangi	Jan 10, 2021
640	Lisa	Rofel	Jan 10, 2021
641	Lisa	W	Jan 10, 2021
642	Larry	Brown	Jan 10, 2021
643	Barbara	Perea	Jan 10, 2021
644	Tea	Houck	Jan 10, 2021
645	emma	graham	Jan 10, 2021

#	First name	Last name	Date
646	Michael	Coholan	Jan 10, 2021
647	Linda	Aldrich	Jan 10, 2021
648	Maia	Jones	Jan 10, 2021
649	Sam	Fleischmann	Jan 10, 2021
650	Elizabeth	Zambelli	Jan 10, 2021
651	Marie	Sorenson	Jan 10, 2021
652	natalie	chin	Jan 10, 2021
653	Ilana	Brandstetter	Jan 10, 2021
654	SUSAN	WITKA	Jan 10, 2021
655	Mitch	Clark	Jan 10, 2021
656	JOHN	MORRISON	Jan 10, 2021
657	Sadie	McFarlane	Jan 10, 2021
658	Kim	Wells	Jan 10, 2021
659	Nick	Ames	Jan 10, 2021
660	Barbara	Wentworth	Jan 10, 2021
661	Silvia E.	Arabia	Jan 10, 2021
662	Steve	Monty	Jan 10, 2021
663	Rafael	Guiulfo	Jan 10, 2021
664	Leonard	Tremmel	Jan 10, 2021
665	John	Mortimer	Jan 10, 2021
666	claudette	heisler	Jan 10, 2021
667	Cathy	Haller	Jan 10, 2021
668	Abby	Thrasher	Jan 10, 2021
669	Dana	Jemison	Jan 10, 2021
670	Zeke	Weiner	Jan 10, 2021
671	Ann	Clegg	Jan 10, 2021
672	Kristina	Tenhunfeld	Jan 10, 2021
673	George	Gutekunst	Jan 10, 2021
674	Dan	Lorimer	Jan 10, 2021
675	Bruce	Spivey	Jan 10, 2021
676	Kelly	LeCoy	Jan 10, 2021
677	Lucy	Hudson	Jan 11, 2021
678	Pari	Moore	Jan 11, 2021
679	Shelley	Carter	Jan 11, 2021
680	Henry	Smith	Jan 11, 2021
681	David	Monedero	Jan 11, 2021
682	Patricia	Fox	Jan 11, 2021
683	Caroline	Phillips	Jan 11, 2021
684	Suzanne	Panelli	Jan 11, 2021
685	Erica	Desouza	Jan 11, 2021
686	Deborah	Gallegos	Jan 11, 2021
687	Valentina	Dibs	Jan 11, 2021
688	David	Thomas	Jan 11, 2021

#	First name	Last name	Date
689	Inge	Horton	Jan 11, 2021
690	Shelley	Buchanan	Jan 11, 2021
691	Jose	Aguilar-Karayianni	Jan 11, 2021
692	Saleh	Adi	Jan 11, 2021
693	ROSS	MADDEN	Jan 11, 2021
694	Andrea	O'Leary	Jan 11, 2021
695	Eva Maria	Van Niekerk	Jan 11, 2021
696	Christopher	Gutierrez	Jan 11, 2021
697	Peggy	Lopipero-Langmo	Jan 11, 2021
698	Bob	Gorringe	Jan 11, 2021
699	Molley	L:owry	Jan 11, 2021
700	Kathleen	Prophete	Jan 11, 2021
701	Richard	Lowry	Jan 11, 2021
702	Iris	Bucchioni	Jan 11, 2021
703	Lauren	Meredith	Jan 11, 2021
704	Roman	Weingartner	Jan 11, 2021
705	Ferrara	Pan	Jan 11, 2021
706	Wesley	Prager	Jan 11, 2021
707	Jeffrey	Cole	Jan 11, 2021
708	Saori	Miyazaki	Jan 11, 2021
709	Ken	Scott	Jan 11, 2021
710	Christian	Vega	Jan 11, 2021
711	Michael	Wilk	Jan 11, 2021
712	Christine	VAN DOORN	Jan 11, 2021
713	manuela	calhoun	Jan 11, 2021
714	Guillermo	Velez	Jan 11, 2021
715	Ariel	Sultan	Jan 11, 2021
716	Tom	ZIMBEROFF	Jan 11, 2021
717	Elyn	Brennan	Jan 11, 2021
718	Jake	Kaplove	Jan 11, 2021
719	Susan	Williard	Jan 11, 2021
720	Emily	Kuo	Jan 11, 2021
721	Elena	Dimitrova	Jan 11, 2021
722	Sarenna	Shaw	Jan 11, 2021
723	Hilary	Petee	Jan 11, 2021
724	Abul	Meghani	Jan 11, 2021
725	Alanah	Anderson	Jan 11, 2021
726	Carrie	Jung	Jan 11, 2021
727	David	Hansen	Jan 11, 2021
728	Zoe	Mann	Jan 11, 2021
729	Taylor	Ortiz	Jan 11, 2021
730	Emily	Brumsted	Jan 11, 2021
731	Diann	Rose	Jan 11, 2021

#	First name	Last name	Date
732	Jennifer	Liu	Jan 11, 2021
733	Ruby	Guerra	Jan 11, 2021
734	Roger	Hofmann	Jan 11, 2021
735	Diana	Berges	Jan 11, 2021
736	Vera	Genkin	Jan 11, 2021
737	Richard	Perry	Jan 11, 2021
738	Gregg	Schulze	Jan 11, 2021
739	Maria	Hutchins	Jan 11, 2021
740	ELIZABETH D	GILLIAN	Jan 11, 2021
741	Sumeet	Maniar	Jan 11, 2021
742	Alex	Goldman	Jan 11, 2021
743	Denise	Selleck	Jan 11, 2021
744	Justin	Truong	Jan 11, 2021
745	Chelsea	Snell	Jan 11, 2021
746	Karen	Leigh	Jan 11, 2021
747	Keegan	Doung	Jan 11, 2021
748	Eva	Galanes-Rosenbaum	Jan 11, 2021
749	John	Oda	Jan 11, 2021
750	Katia	Ferris	Jan 11, 2021
751	Ken	Berman	Jan 11, 2021
752	miqi	bin	Jan 11, 2021
753	Julie	Napolin	Jan 11, 2021
754	Carrie	Lafferty	Jan 11, 2021
755	Scott	Jacobs	Jan 11, 2021
756	Elisa	Michelet	Jan 11, 2021
757	Lorna	Strutt	Jan 11, 2021
758	georgina	queruel	Jan 11, 2021
759	Barton	Friedland	Jan 11, 2021
760	Jonathan	Holland	Jan 11, 2021
761	Tim	Roche	Jan 11, 2021
762	Kathleen	Hanna	Jan 11, 2021
763	Melissa	Erle	Jan 11, 2021
764	Omar	Khan	Jan 11, 2021
765	Marsha	Chisholm	Jan 11, 2021
766	Ted	Price	Jan 11, 2021
767	Dan	Morrison	Jan 11, 2021
768	Lucy	Ross	Jan 11, 2021
769	Robert	Rittling	Jan 11, 2021
770	Susan	Arnesen	Jan 11, 2021
771	Jonathan	Stone	Jan 11, 2021
772	Emma	Logan	Jan 11, 2021
773	Hansel	Maass	Jan 11, 2021
774	Natalie	Enright	Jan 11, 2021

#	First name	Last name	Date
775	Ryan	Scura	Jan 11, 2021
776	Sally	Van Loon	Jan 11, 2021
777	Nicholas	Allen	Jan 11, 2021
778	TJ	Holsman	Jan 11, 2021
779	Karen	Wood	Jan 11, 2021
780	Mike	Simonian	Jan 11, 2021
781	DT	Chiu	Jan 11, 2021
782	Caitlin	Jolicoeur	Jan 11, 2021
783	Maymie	Chan	Jan 11, 2021
784	Nathaniel	Freeman	Jan 11, 2021
785	Jessica	Garcia	Jan 11, 2021
786	Mei Lie	Wong	Jan 11, 2021
787	Sally	Winn	Jan 11, 2021
788	Paula	Pulizzi	Jan 11, 2021
789	letitia Upton	brown	Jan 11, 2021
790	Steve	Leeds	Jan 11, 2021
791	Jackie	Barshak	Jan 11, 2021
792	May	Le	Jan 11, 2021
793	William	Boldnweck	Jan 11, 2021
794	Katie	Innes	Jan 11, 2021
795	Elizabeth	Hille	Jan 11, 2021
796	Nina	Otsuka	Jan 11, 2021
797	Jody	Wirt	Jan 11, 2021
798	Anastasia	Yovanopoulos	Jan 11, 2021
799	Hugo Tao	Vikati Ong	Jan 11, 2021
800	LB	VO	Jan 11, 2021
801	Linda	Tam	Jan 11, 2021
802	Rose	Lau	Jan 11, 2021
803	Mary	Murphy	Jan 11, 2021
804	Ian	Hiebert	Jan 11, 2021
805	Jennifer	Feng	Jan 11, 2021
806	Lisa	Sporri	Jan 11, 2021
807	Edwin	Ong	Jan 11, 2021
808	Denise	Donaldson	Jan 11, 2021
809	Alex	Vikati	Jan 11, 2021
810	Ian	Wilson	Jan 11, 2021
811	LUCY	PON	Jan 11, 2021
812	Karen	Zader	Jan 11, 2021
813	Cynthia	Hinkle	Jan 11, 2021
814	Mark	Gibson	Jan 11, 2021
815	Alejandro	Torres	Jan 11, 2021
816	Rebecca	Jacobson	Jan 11, 2021
817	Joel	Skidmore	Jan 11, 2021

#	First name	Last name	Date
818	Erica	Junghans	Jan 11, 2021
819	Ashley	Daigneault	Jan 11, 2021
820	Cheyenne	Dennen	Jan 12, 2021
821	Joslyn	Baxter	Jan 12, 2021
822	Libby	MacKenzie	Jan 12, 2021
823	Christina	Cole	Jan 12, 2021
824	Victoria	Sanchez	Jan 12, 2021
825	Timothy	Gilmore	Jan 12, 2021
826	Melvyn	Cronin	Jan 12, 2021
827	Kendra	Staggs	Jan 12, 2021
828	John	Copoulos	Jan 12, 2021
829	John-Casey	O'Donnell	Jan 12, 2021
830	Stephen	McArthur	Jan 12, 2021
831	Irene	Balcar	Jan 12, 2021
832	Jadon	Trach	Jan 12, 2021
833	Martha	Cooper	Jan 12, 2021
834	Ken	Chiang	Jan 12, 2021
835	Kameela	Din	Jan 12, 2021
836	Xander	Rudelis	Jan 12, 2021
837	Robyn	Cross	Jan 12, 2021
838	Katie	Dauser	Jan 12, 2021
839	Sharon	Aguila	Jan 12, 2021
840	Eric	Bailey	Jan 12, 2021
841	Rachele	Long	Jan 12, 2021
842	Morgan	Keys	Jan 12, 2021
843	George	Westermark	Jan 12, 2021
844	Kimberly	Hauschild	Jan 12, 2021
845	Bevin	Fernandez	Jan 12, 2021
846	Nicholas	Krikoriantz	Jan 12, 2021
847	Liz	Kao	Jan 12, 2021
848	Joe	Nangle	Jan 12, 2021
849	Connor	O'Farrell	Jan 12, 2021
850	Mackenzie	Nickels	Jan 12, 2021
851	Jovanna	Venegas	Jan 12, 2021
852	Sue	Fandel	Jan 12, 2021
853	Melissa	Chong	Jan 13, 2021
854	Robert	Sutton	Jan 13, 2021
855	Xin-Ying	Chen	Jan 13, 2021
856	Rensy	W	Jan 13, 2021
857	Elena	Freiwald	Jan 13, 2021
858	John	Ribeiro-Broomhead	Jan 13, 2021
859	Suzy	Prowitt	Jan 13, 2021
860	Stephanie	Leonard	Jan 13, 2021

#	First name	Last name	Date
861	Evie	Fong	Jan 13, 2021
862	mark	Gould	Jan 13, 2021
863	susan	lopez	Jan 13, 2021
864	Sean	Silverman	Jan 13, 2021
865	Erik	Woodruff	Jan 13, 2021
866	Tiffany	Spohrer	Jan 13, 2021
867	jean	MacDermid	Jan 13, 2021
868	Francesca	Pera	Jan 13, 2021
869	Cecilia	Landman	Jan 13, 2021
870	Jennifer	Clevidence	Jan 14, 2021
871	Katie	Wolf	Jan 14, 2021
872	Kerry	Yates	Jan 14, 2021
873	Cordelia	Wolf	Jan 14, 2021
874	karen	pierotti	Jan 14, 2021
875	Meryl	Press	Jan 14, 2021
876	Pinky	Kushner	Jan 14, 2021
877	Melissa	Grabanski	Jan 14, 2021
878	Harry	Pariser	Jan 14, 2021
879	Hillary	Hodges	Jan 15, 2021
880	Daylan	Buchanan	Jan 15, 2021
881	Clare	Robinson	Jan 15, 2021
882	Doria	Fan	Jan 15, 2021
883	Tierney	Britz	Jan 15, 2021
884	Jessica	Davison	Jan 15, 2021
885	Bradford	Hague	Jan 15, 2021
886	Pamela	Lee	Jan 16, 2021
887	Allen	White	Jan 16, 2021
888	Ann	Cartier	Jan 16, 2021
889	Ron	Kapla	Jan 16, 2021
890	Christopher	Solmssen	Jan 17, 2021
891	Vincenzo	Rubino	Jan 17, 2021
892	Janine	M	Jan 17, 2021
893	Clarissa	Favre	Jan 17, 2021
894	Brett	McGuire	Jan 17, 2021
895	Nicola	Skidmore	Jan 18, 2021
896	Deborah	Skidmore	Jan 18, 2021

EXHIBIT B

3. SCREENING CRITERIA

The screening criteria identified in this section are **not thresholds of significance**. The Air District developed screening criteria to provide lead agencies and project applicants with a conservative indication of whether the proposed project could result in potentially significant air quality impacts. If all of the screening criteria are met by a proposed project, then the lead agency or applicant would not need to perform a detailed air quality assessment of their project's air pollutant emissions. These screening levels are generally representative of new development on greenfield sites without any form of mitigation measures taken into consideration. In addition, the screening criteria in this section do not account for project design features, attributes, or local development requirements that could also result in lower emissions. For projects that are mixed-use, infill, and/or proximate to transit service and local services, emissions would be less than the greenfield type project that these screening criteria are based on.

If a project includes emissions from stationary source engines (e.g., back-up generators) and industrial sources subject to Air District Rules and Regulations, the screening criteria should not be used. The project's stationary source emissions should be analyzed separately from the land use-related indirect mobile- and area-source emissions. Stationary-source emissions are not included in the screening estimates given below and, for criteria pollutants, must be added to the indirect mobile- and area-source emissions generated by the land use development and compared to the appropriate Thresholds of Significance. Greenhouse gas emissions from permitted stationary sources should not be combined with operational emissions, but compared to a separate stationary source greenhouse gas threshold.

3.1. OPERATIONAL-RELATED IMPACTS

3.1.1. Criteria Air Pollutants and Precursors

The screening criteria developed for criteria pollutants and precursors were derived using the default assumptions used by the Urban Land Use Emissions Model (URBEMIS). If the project has sources of emissions not evaluated in the URBEMIS program the screening criteria should not be used. If the project meets the screening criteria in Table 3-1, the project would not result in the generation of operational-related criteria air pollutants and/or precursors that exceed the *Thresholds of Significance* shown in Table 2-2. Operation of the proposed project would therefore result in a less-than-significant cumulative impact to air quality from criteria air pollutant and precursor emissions.

3.1.2. Greenhouse Gases

The screening criteria developed for greenhouse gases were derived using the default emission assumptions in URBEMIS and using off-model GHG estimates for indirect emissions from electrical generation, solid waste and water conveyance. If the project has other significant sources of GHG emissions not accounted for in the methodology described above, then the screening criteria should not be used. Projects below the applicable screening criteria shown in Table 3-1 would not exceed the 1,100 MT of CO_2e/yr GHG threshold of significance for projects other than permitted stationary sources.

If a project, including stationary sources, is located in a community with an adopted qualified GHG Reduction Strategy, the project may be considered less than significant if it is consistent with the GHG Reduction Strategy. A project must demonstrate its consistency by identifying and implementing all applicable feasible measures and policies from the GHG Reduction Strategy into the project.

Table 3-1
Operational-Related Criteria Air Pollutant and Precursor Screening Level Sizes

Land Use Type	Operational Criteria Pollutant Screening Size	Operational GHG Screening Size	Construction-Related Screening Size
Single-family	325 du (NOX)	56 du	114 du (ROG)
Apartment, low-rise	451 du (ROG)	78 du	240 du (ROG)
Apartment, mid-rise	494 du (ROG)	87 du	240 du (ROG)
Apartment, high-rise	510 du (ROG)	91 du	249 du (ROG)
Condo/townhouse, general	451 du (ROG)	78 du	240 du (ROG)
Condo/townhouse, high-rise	511 du (ROG)	92 du	252 du (ROG)
Mobile home park	450 du (ROG)	82 du	114 du (ROG)
Retirement community	487 du (ROG)	94 du	114 du (ROG)
Congregate care facility	657 du (ROG)	143 du	240 du (ROG)
Day-care center	53 ksf (NOX)	11 ksf	277 ksf (ROG)
Elementary school	271 ksf (NOX)	44 ksf	277 ksf (ROG)
Elementary school	2747 students (ROG)	-	3904 students (ROG)
Junior high school	285 ksf (NOX)	-	277 ksf (ROG)
Junior high school	2460 students (NOX)	46 ksf	3261 students (ROG)
High school	311 ksf (NOX)	49 ksf	277 ksf (ROG)
High school	2390 students (NOX)	-	3012 students (ROG)
Junior college (2 years)	152 ksf (NOX)	28 ksf	277 ksf (ROG)
Junior college (2 years)	2865 students (ROG)	-	3012 students (ROG)
University/college (4 years)	1760 students (NOX)	320 students	3012 students (ROG)
Library	78 ksf (NOX)	15 ksf	277 ksf (ROG)
Place of worship	439 ksf (NOX)	61 ksf	277 ksf (ROG)
City park	2613 acres (ROG)	600 acres	67 acres (PM10)
Racquet club	291 ksf (NOX)	46 ksf	277 ksf (ROG)
Racquetball/health	128 ksf (NOX)	24 ksf	277 ksf (ROG)
Quality restaurant	47 ksf (NOX)	9 ksf	277 ksf (ROG)
High turnover restaurant	33 ksf (NOX)	7 ksf	277 ksf (ROG)
Fast food rest. w/ drive thru	6 ksf (NOX)	1 ksf	277 ksf (ROG)
Fast food rest. w/o drive thru	8 ksf (NOX)	1 ksf	277 ksf (ROG)
Hotel	489 rooms (NOX)	83 rooms	554 rooms (ROG)
Motel	688 rooms (NOX)	106 rooms	554 rooms (ROG)
Free-standing discount store	76 ksf (NOX)	15 ksf	277 ksf (ROG)
Free-standing discount superstore	87 ksf (NOX)	17 ksf	277 ksf (ROG)
Discount club	102 ksf (NOX)	20 ksf	277 ksf (ROG)
Regional shopping center	99 ksf (NOX)	19 ksf	277 ksf (ROG)
Electronic Superstore	95 ksf (NOX)	18 ksf	277 ksf (ROG)
Home improvement superstore	142 ksf (NOX)	26 ksf	277 ksf (ROG)
Strip mall	99 ksf (NOX)	19 ksf	277 ksf (ROG)
Hardware/paint store	83 ksf (NOX)	16 ksf	277 ksf (ROG)
Supermarket	42 ksf (NOX)	8 ksf	277 ksf (ROG)
Convenience market (24 hour)	5 ksf (NOX)	1 ksf	277 ksf (ROG)
Convenience market with gas pumps	4 ksf (NOX)	1 ksf	277 ksf (ROG)
Bank (with drive-through)	17 ksf (NOX)	3 ksf	277 ksf (ROG)
General office building	346 ksf (NOX)	53 ksf	277 ksf (ROG)

Table 3-1
Operational-Related Criteria Air Pollutant and Precursor Screening Level Sizes

Land Use Type	Operational Criteria Pollutant Screening Size	Operational GHG Screening Size	Construction-Related Screening Size
Office park	323 ksf (NOX)	50 ksf	277 ksf (ROG)
Government office building	61 ksf (NOX)	12 ksf	277 ksf (ROG)
Government (civic center)	149 ksf (NOX)	27 ksf	277 ksf (ROG)
Pharmacy/drugstore w/ drive through	49 ksf (NOX)	10 ksf	277 ksf (ROG)
Pharmacy/drugstore w/o drive through	48 ksf (NOX)	10 ksf	277 ksf (ROG)
Medical office building	117 ksf (NOX)	22 ksf	277 ksf (ROG)
Hospital	226 ksf (NOX)	39 ksf	277 ksf (ROG)
Hospital	334 beds (NOX)	84 ksf	337 beds (ROG)
Warehouse	864 ksf (NOX)	64 ksf	259 ksf (NOX)
General light industry	541 ksf (NOX)	121 ksf	259 ksf (NOX)
General light industry	72 acres (NOX)	-	11 acres (NOX)
General light industry	1249 employees (NOX)	-	540 employees (NOX)
General heavy industry	1899 ksf (ROG)	-	259 ksf (NOX)
General heavy industry	281 acres (ROG)	-	11 acres (NOX)
Industrial park	553 ksf (NOX)	65 ksf	259 ksf (NOX)
Industrial park	61 acres (NOX)	-	11 acres (NOX)
Industrial park	1154 employees (NOX)	-	577 employees (NOX)
Manufacturing	992 ksf (NOX)	89 ksf	259 ksf (NOX)

Notes: du = dwelling units; ksf = thousand square feet; NO_X = oxides of nitrogen; ROG = reactive organic gases. Screening levels include indirect and area source emissions. Emissions from engines (e.g., back-up generators) and industrial sources subject to Air District Rules and Regulations embedded in the land uses are not included in the screening estimates and must be added to the above land uses.
Refer to Appendix D for support documentation.
Source: Modeled by EDAW 2009.

3.2. COMMUNITY RISK AND HAZARD IMPACTS

Please refer to Chapter 5 for discussion of screening criteria for local community risk and hazard impacts.

3.3. CARBON MONOXIDE IMPACTS

This preliminary screening methodology provides the Lead Agency with a conservative indication of whether the implementation of the proposed project would result in CO emissions that exceed the *Thresholds of Significance* shown in Table 2-3.

The proposed project would result in a less-than-significant impact to localized CO concentrations if the following screening criteria is met:

1. Project is consistent with an applicable congestion management program established by the county congestion management agency for designated roads or highways, regional transportation plan, and local congestion management agency plans.

2. The project traffic would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour.
3. The project traffic would not increase traffic volumes at affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, bridge underpass, natural or urban street canyon, below-grade roadway).

3.4. ODOR IMPACTS

Table 3-3 presents odor screening distances recommended by BAAQMD for a variety of land uses. Projects that would site a new odor source or a new receptor farther than the applicable screening distance shown in Table 3-3 from an existing receptor or odor source, respectively, would not likely result in a significant odor impact. The odor screening distances in Table 3-3 should not be used as absolute screening criteria, rather as information to consider along with the odor parameters and complaint history. Refer to *Chapter 7 Assessing and Mitigating Odor Impacts* for comprehensive guidance on significance determination.

Table 3-3
Odor Screening Distances

Land Use/Type of Operation	Project Screening Distance
Wastewater Treatment Plant	2 miles
Wastewater Pumping Facilities	1 mile
Sanitary Landfill	2 miles
Transfer Station	1 mile
Composting Facility	1 mile
Petroleum Refinery	2 miles
Asphalt Batch Plant	2 miles
Chemical Manufacturing	2 miles
Fiberglass Manufacturing	1 mile
Painting/Coating Operations	1 mile
Rendering Plant	2 miles
Coffee Roaster	1 mile
Food Processing Facility	1 mile
Confined Animal Facility/Feed Lot/Dairy	1 mile
Green Waste and Recycling Operations	1 mile
Metal Smelting Plants	2 miles
Refer to Appendix D for support documentation.	

Facilities that are regulated by CalRecycle (e.g. landfill, composting, etc.) are required to have Odor Impact Minimization Plans (OIMP) in place and have procedures that establish fence line odor detection thresholds. The Air District recognizes a Lead Agency's discretion under CEQA to use established odor detection thresholds as thresholds of significance for CEQA review for CalRecycle regulated facilities with an adopted OIMP.

3.5. CONSTRUCTION-RELATED IMPACTS

3.5.1. Criteria Air Pollutants and Precursors

This preliminary screening provides the Lead Agency with a conservative indication of whether the proposed project would result in the generation of construction-related criteria air pollutants and/or precursors that exceed the *Thresholds of Significance* shown in Table 2-4.

If all of the following *Screening Criteria* are met, the construction of the proposed project would result in a less-than-significant impact from criteria air pollutant and precursor emissions.

1. The project is below the applicable screening level size shown in Table 3-1; and
2. All *Basic Construction Mitigation Measures* would be included in the project design and implemented during construction; and
3. Construction-related activities would not include any of the following:
    a. Demolition;
    b. Simultaneous occurrence of more than two construction phases (e.g., paving and building construction would occur simultaneously);
    c. Simultaneous construction of more than one land use type (e.g., project would develop residential and commercial uses on the same site) (not applicable to high density infill development);
    d. Extensive site preparation (i.e., greater than default assumptions used by the Urban Land Use Emissions Model [URBEMIS] for grading, cut/fill, or earth movement); or
    e. Extensive material transport (e.g., greater than 10,000 cubic yards of soil import/export) requiring a considerable amount of haul truck activity.

3.5.2. Community Risk and Hazards

Chapter 5, *Assessing and Mitigating Local Community Risk and Hazard Impacts*, contains information on screening criteria for local risk and hazards.

EXHIBIT C

Shawn Smallwood, PhD
3108 Finch Street
Davis, CA 95616

Diane Wong
UCSF Real Estate - Campus Planning
654 Minnesota Street
San Francisco, CA 94143-0286

15 January 2021

RE: Comprehensive Parnassus Heights Plan

Dear Ms. Wong,

I write to reply to responses to my comments on UCSF's (2020) Draft Environmental Impact Report ("DEIR") prepared for the Parnassus Heights Plan. My qualifications for doing so as an expert were summarized in my original comment letter of 1 September 2020, along with my CV.

My replies follow the numbered the responses in the FEIR.

O-LD2-84. The response refers me to response O-LD2-31.

Response O-LD2-31 says I detected 23 bird species, but I detected 22 bird species. The response neglects to address my interpretation of the species detection rate. A logistic model fit to my rate of detections predicts many more species occur on the site than the number of species I detected.

Response O-LD2-31 also mischaracterizes my comments, "The commenter states that the Draft EIR includes only 6 birds; that is incorrect as the Draft EIR mentions 20 species of birds." I commented that of the 40 special-status species of birds I addressed, the EIR addresses only 6 of them. In my Table 2, I did not bother to list bird species that I knew would not occur at the site, but which the DEIR briefly addressed. Unlike the DEIR, my Table 2 did not include burrowing owl, western snowy plover, yellow rail, California black rail, Alameda song sparrow, San Pablo song sparrow, Ridgeway's rail, California least tern, yellow-headed blackbird, nor northern spotted owl. Most of the species of birds mentioned in the DEIR are irrelevant to the project's potential impacts. The species I listed in my Table 2 are relevant.

Response O-LD2-31 implies that birds documented in the Mount Sutro Open Space Reserve stay within the Reserve. It says, "The commenter states that the Draft EIR neglects to include birds known to occur in the Reserve. The Draft EIR project area includes bordering areas of the Reserve, but does not include the entire Reserve; birds such as northern harrier (*Circus hudsonicus*) which have been observed in the Reserve, are unlikely in the areas of the campus site where CPHP development is proposed." However, none of the birds documented in the Reserve are flightless; all are volant. Birds documented in the Reserve must have flown to the Reserve, and they must also fly out of the Reserve to migrate, disperse, and patrol home ranges. As I commented in my

letter of 1 September 2020 (pages 7 and 17), birds and bats using the Reserve fly to and from the Reserve.

According to response O-LD2-31, "Special-status birds were identified as such in the Draft EIR if they were federal or State listed species, or state species of special concern in California." However, §15380 of the CEQA Guidelines defines special-status species as Endangered, Rare, or Threatened. The CEQA definition is consistent with how I identified them in Table 2 of my comment letter. I relied on the status assigned each species in California's Special Animal List (California Department of Fish and Wildlife, Natural Diversity Database. November 2019. Special Animals List. Periodic publication.) – a list that is often relied upon for CEQA reviews. It would be helpful for the EIR to apply the definition of special-status species in CEQA Guidelines §15380.

The last portion of the Response O-LD2-31 seems disingenuous, arguing that because all native migratory bird species are protected under the Migratory Bird Treaty Act, all bird species identified by me and others "...are included in the environmental baseline and will be protected from impacts to active nests, consistent with State and federal regulations, as provided under CPHP Mitigation Measure BIO-1c in the Draft EIR." The response is disingenuous because it implies that a take-avoidance salvage survey somehow also serves as the analysis of project impacts to these birds. My comment addressed the inadequacy of the EIR's analysis of impacts, whereas the response claims that a mitigation measure of low effect also doubles as the analysis of impacts. It cannot.

O-LD2-85. The response reaffirms my characterization of the net effect of redesignating an already-forested area as mitigation for taking 0.15 acres from the Mount Sutro Open Space Reserve. As I commented, "From the perspective of wildlife, the swap in land designations results in a 0.15-acre habitat loss." Wildlife residing on the land to be redesignated will experience no change in their existence, where wildlife residing on the 0.15 acres to be taken from the Reserve will be destroyed. Hence, there would be a net loss of 0.15 acres of habitat on what is already a desperately isolated patch of habitat in the City of San Francisco.

O-LD2-86. The response refers me to Master Response 10.

Referring to comments on bird-window collision mortality, Master Response 10 defends the EIR's deficient impact analysis by claiming such an analysis would be premature: "Because the specific materials, size and massing of the buildings that would be built under the CPHP are not known at this time, it is not possible to quantify this impact." However, a range of possible impacts can be predicted quantitatively based on a range of assumptions for how much glass would extend across the façades of buildings. I made one prediction based on one assumption on the use of glass. Other predictions can be made from other assumptions. The decision-makers and the public should be informed of the range of possible impacts that would be caused by bird-window collisions.

Master Response 10 defends its level of analysis as adequate because it consists of the mere mention of the Pacific Flyway and the mere mention of potential bird-window collision mortality. Simply mentioning types of impacts is not an analysis. As I

demonstrated in my comments, one can analyze the potential impact quantitatively. Even a qualitative analysis would be more helpful than mere mentions of the existence of the Pacific Flyway and of the bird-window collision issue.

Master Response 10 defers mitigation of bird-window collision impacts to project-level EIRs, arguing that this programmatic EIR cannot do so because building details remain unknown. However, the EIR can and should adopt the City of San Francisco's (2011) bird-safe guidelines as well as the specific mitigation measures that I recommend to programmatically mitigate building impacts going forward. Based on my experience, the risk of not adopting sufficient bird-safe guidelines at this stage would be that each project-specific EIR would refer back to the programmatic EIR in support of its claim that the bird-window collision issue had already been analyzed and mitigated.

Master Response 10 deflects from the issues I raised about the large numbers of birds that annually migrate through the project area and the need for study of bird flight patterns in the area to strategically design the project to minimize impacts. It also deflects from my comment that the situational context of a building can contribute more to collision mortality than can the building's height (I provided an infamous example in the Morgan Mail Building of New York). According to Master Response 10, "It is acknowledged that taller buildings are more likely to cause collisions with migrating birds and bats, however, this potential impact is highly localized within the context of the Pacific Flyway, which encompasses the whole western United States." Acknowledging that taller buildings are more likely to cause collisions implies that I asserted such a relationship. But again, I pointed out the increased risk from the project's location next to Mount Sutro Open Space Reserve. Even a low-rise building could be more hazardous depending on the types and extent of glass used in the building's façades, how far from the Reserve it is located and how it is oriented relative to bird traffic. Rather than throwing up its hands at the vastness of the Pacific Flyway, the University ought to perform surveys to learn how birds use the local airspace of the project.

Master Response 10 further deflects from the issues I raised by claiming, "...UCSF will consider potential impacts to migratory birds in siting proposed buildings as part of CPHP Mitigation Measure BIO-2b." It adds, "The recommendation for more detailed flight pattern studies is noted, however, CPHP Mitigation Measures BIO-2a and -2b will reduce the potential bird strikes to occur under the CPHP to a less than significant level by siting buildings to limit collision and by designing buildings to limit light and reflectivity, thus minimizing bird strikes." In fact, mitigation measures BIO-2a and -2b do not involve strategic siting of buildings to minimize impacts to birds. These measures address the locations of construction areas, the lighting of construction areas, installations of exterior lights in the project, and the use of building materials to minimize reflectance and glare. The closest these measures get toward my recommendation is to orient buildings to minimize light and glare. However, it is unclear how this last measure has anything to do with minimizing bird-window collision mortality or energetic impacts to birds that would have to negotiate their ways through or around the project.

Rather than making unfounded claims that certain mitigation measures will effectively minimize impacts, the University ought to perform the simple surveys that could inform decision-making. Learn how birds use their aerohabitat of the project area. This is the approach I used to help reduce bird mortality among wind turbines in the Altamont Pass Wind Resource Area ("APWRA"). The original wind turbines installed in the early 1980s were sited to maximize wind energy generation but without any thought to their potential impacts to birds. Following surveys to quantify relative abundance of birds across the APWRA, I developed map-based models to guide turbine siting when the old turbines were repowered with modern turbines (Smallwood et al. 2017). A before-after, control-impact experiment measured a 75% to 82% reduction of golden eagle collision mortality and a 65% reduction of bird collision mortality at the first repowered project for which the model was applied for turbine siting (Brown et al. 2016). Repowering since that time benefitted from improved models based on flight behavior surveys and GPS telemetry of golden eagles. Similar surveys can and should be initiated in the project area to characterize which species are flying through during which seasons and times of day, their heights above ground, and how they react to existing buildings. The University would be much better informed about collision risks after only the first year of surveys.

O-LD2-87. The response refers me to response O-LD2-31.

Response O-LD2-31 dodges my comments about how the EIR pigeon-holes species into unrealistically narrow portions of the environment. Worse, it claims that wildlife living in Mount Sutro Open Space Reserve are constrained to the Reserve. None of the birds are so-constrained, and neither are the bats. Otherwise, see my earlier replies to Response O-LD2-31.

O-LD2-88. The response refers me to Master Response 10. However, Master Response 10 does not address the list of species I presented in Table 2 of my 1 September 2020 comments. This list of species was of special-status species and other species known to have been killed by windows. With the release of a new study since my comments of 1 September 2020 (Basilio et al. 2020: Supplemental Material), we know of 9 more special-status species that have been documented as window collision fatalities and are therefore susceptible to new structural glass installations (Table 1, which is a revised version of Table 2 in my comments of 1 September 2020).

In revising the Table, I checked eBird records for any updates. In the process, I identified another 7 special-status species of birds recently documented in the project area. My total increased from the 40 that I reported in my comment letter to 47 herein (Table 1). Of these 47 special-status species, 25 (53%) have now been documented as collision fatalities, which is a substantial increase over the 40% documented as of 1 September 2020. Additional research of this issue will undoubtedly expand the documentation of species represented by collision mortality caused by window traps that new projects add to avian aerohabitat. The EIR needs to seriously address this issue.

Table 1. eBird (https://eBird.org) reports of special-status species near the project site and species reported as window-collision victims at the nearby California Academy of Sciences (CAS) buildings (Kahle et al. 2016).

Species	Scientific name	Status[1]	Occurrences			Number counted at CAS study		Known window deaths
			EIR like-lihood	GGAS 2020	eBird	As window deaths	Alive in survey plots	
American white pelican	*Pelacanus erythrorhynchos*	SSC1			Nearby			
Brown pelican	*Pelecanus occidentalis californicus*	CFP			On site			
Double-crested cormorant	*Phalacrocorax auratus*	TWL			Nearby			
California gull	*Larus californicus*	TWL			On site			
Caspian tern	*Hydroprogne caspia*	TWL			On site			
Elegant tern	*Thalasseus elegans*	BCC			Nearby			
Turkey vulture	*Cathartes aura*	FGC 3503.5			On site			Yes
Bald eagle	*Haliaeetus leucocephalus*	BGEPA, BCC, CE, CFP			Nearby			
Golden eagle	*Aquila chrysaetos*	BGEPA, BCC, CFP			Nearby			
Osprey	*Pandion haliaetus*	TWL, FGC 3503.5			On site			Yes
Red-tailed hawk	*Buteo jamaicensis*	FGC 3503.5		Yes	On site		1	Yes
Ferruginous hawk	*Buteo regalis*	TWL, FGC 3503.5			Nearby			
Swainson's hawk	*Buteo swainsoni*	CT, BCC, FGC 3503.5			Nearby			
Red-shouldered hawk	*Buteo lineatus*	FGC 3503.5		Yes	On site		1	Yes
Rough-legged hawk		FGC 3503.5			Nearby			
Sharp-shinned hawk	*Accipiter striatus*	FGC 3503.5, TWL			On site			Yes
Cooper's hawk	*Accipiter cooperi*	FGC 3503.5, TWL		Yes	On site			Yes
Northern harrier	*Circus cyaneus*	SSC3, FGC 3503.5	None		On site			
White-tailed kite	*Elanus leucurus*	CFP, TWL, FGC 3503.5	Low		Nearby			
American kestrel	*Falco sparverius*	FGC 3503.5			Nearby			Yes

Species	Scientific name	Status[1]	Occurrences			Number counted at CAS study		Known window deaths
			EIR like-lihood	GGAS 2020	eBird	As window deaths	Alive in survey plots	
Merlin	*Falco columbarius*	FGC 3503.5, TWL			On site			Yes
Peregrine falcon	*Falco peregrinus*	CFP, BCC	Moderate		On site			Yes
Mourning dove	*Zenaida macroura*			Yes	On site	6	3	Yes
Great-horned owl	*Bubo virginianus*	FGC 3503.5			On site		1	Yes
Long-eared owl	*Asio otus*	SSC3, FGC 3503.5			Nearby			Yes
Short-eared owl	*Asio flammeus*	SSC3, FGC 3503.5	Low		Very close			Yes
Western screech-owl	*Megascops kennicotti*	FGC 3503.5			Nearby			Yes
Barn owl	*Tyto alba*	FGC 3503.5			On site			Yes
Vaux's swift	*Chaetura vauxi*	SCC2			Nearby			
Anna's hummingbird	*Calypte anna*			Yes	On site	131	256	Yes
Allen's hummingbird	*Selasphorus sasin*	BCC		Yes	On site	37	29	Yes
Costa's hummingbird	*Calypte costae*	BCC			Nearby	1	0	Yes
Rufous hummingbird	*Selasphorus rufus*	BCC			On site	4	0	Yes
Nuttall's woodpecker	*Picoides nuttallii*	BCC			On site		13	
Lewis's woodpecker	*Melanerpes lewis*	BCC			Nearby			
Pacific-slope flycatcher	*Empidonax difficilis*			Yes	On site	1	5	Yes
Olive-sided flycatcher	*Contopus cooperi*	SSC2		Yes	On site			
Willow flycatcher	*Empidonax trailii*	CE, BCC		Yes	Nearby			
Black phoebe	*Sayornis nigricans*			Yes	On site	3	34	Yes
Oak titmouse	*Baeolophus inornatus*	BCC			Nearby			Yes
Chestnut-backed chickadee	*Poecile rufescens*			Yes	On site	1	203	Yes
Bushtit	*Psaltriparus minimus*			Yes	On site	1	399	Yes
Brown creeper	*Certhia americana*			Yes	On site	1	52	Yes
Pygmy nuthatch	*Sitta pygmaea*			Yes	On site	1	242	Yes
Horned lark	*Eremophila alpestris*	TWL			Nearby			

Species	Scientific name	Status[1]	Occurrences			Number counted at CAS study		Known window deaths
			EIR like-lihood	GGAS 2020	eBird	As window deaths	Alive in survey plots	
Loggerhead shrike	*Lanius ludovicianus*	BCC, SSC2			Regional			
Purple martin	*Progne subis*	SSC2			Nearby			Yes
Bank swallow	*Riparia riparia*	CT	Low		Nearby			Yes
Swainson's thrush	*Catharus ustulatus*			Yes	On site	1	1	Yes
Hermit thrush	*Catharus guttatus*			Yes	On site	8	82	Yes
American robin	*Turdus vulvaris*				On site	3	389	Yes
Warbling vireo	*Vireo gilvus*				On site	1	5	Yes
Yellow-rumped warbler	*Setophaga coronata*			Yes	On site	7	92	Yes
Orange-crowned warbler	*Oreothlypis celata*			Yes	On site	2	29	Yes
Townsend's warbler	*Setophaga townsendi*			Yes	On site	3	101	Yes
Wilson's warbler	*Cardellina pusilla*			Yes	On site	3	11	Yes
Yellow warbler	*Setophaga petechia*	SSC2, BCC		Yes	On site	7	18	Yes
San Francisco common yellowthroat	*Geothlypis trichas sinuosa*	SSC3, BCC	None		Nearby	3	0	Yes
Yellow-breasted chat	*Icteria virens*	SSC3			Nearby			Yes
Summer tanager	*Piranga rubra*	SSC1			On site			Yes
Song sparrow	*Melospiza melodia*			Yes	On site	5	435	Yes
Golden-crowned sparrow	*Zonotrichia atricapilla*			Yes	On site	3	230	Yes
White-crowned sparrow	*Zonotrichia leucophrys*			Yes	On site	1	249	Yes
Savannah sparrow	*Passerculus sandwichensis*				On site	2	0	Yes
Lincoln's sparrow	*Melospiza lincolnii*				On site	3	35	Yes
Fox sparrow	*Passerella iliaca*			Yes	On site	6	152	Yes

Species	Scientific name	Status[1]	Occurrences			Number counted at CAS study		Known window deaths
			EIR like-lihood	GGAS 2020	eBird	As window deaths	Alive in survey plots	
Grasshopper sparrow	Ammodramus savannarum	SSC2			Nearby			Yes
Dark-eyed junco	*Junco hyemalis*			Yes	On site	22	510	Yes
California towhee	*Melozone crissalis*			Yes	On site	1	92	Yes
Brown-headed cowbird	*Molothrus ater*				On site	1	39	Yes
Red-winged blackbird	*Agelaius phoeniceus*				On site	1	261	Yes
Brewer's blackbird	*Euphagus cyanocephalus*				On site	25	1027	Yes
Tricolored blackbird	*Agelaius tricolor*	CT, BCC			Nearby		15	
House finch	*Haemorhous mexicanus*			Yes	On site	5	213	Yes
Lesser goldfinch	*Spinus psaltria*			Yes	On site	1	44	Yes
Lawrence's goldfinch	*Carduelis lawrencei*	BCC			Nearby			

[1] Listed as BCC = U.S. Fish and Wildlife Service Bird Species of Conservation Concern, CT or CE = California threatened or endangered, CFP = California Fully Protected (CDFG Code 3511), FGC 3503.5 = California Fish and Game Code 3503.5 -- Birds of prey, and SSC1, SSC2 and SSC3 = California Bird Species of Special Concern priorities 1, 2 and 3, respectively, and TWL = Taxa to Watch List (Shuford and Gardali 2008).

O-LD2-89. The response refers me to Master Response 10. See my replies to O-LD2-86. Otherwise, Master Response 10 does not dispute my prediction of annual collision mortality. At the same time, it claims that the lack of foreknowledge of building design details prevents quantitative predictions of collision mortality. However, as I pointed out earlier, one need not know the design details of future buildings to predict bird-window collision mortality so long as one assumes that trends in building design would apply to this project. If the University was to build windowless buildings, then my assumptions would be erroneous and my predicted mortality inaccurate. If the University builds according to current trends, then my predictions would prove more accurate. The studies I relied upon to predict annual bird-window collision mortality reflected the types of buildings constructed recently, including a disproportionately larger representation of university buildings in the studies. The latter trend resulted from the popularity of bird-window collision studies by graduate students on university campuses across the USA over the last 15 years or so. The foundation of my prediction is robust, and is representative of the types of buildings universities prefer to build. That the response does not dispute the accuracy of my assumptions nor of my mortality prediction suggests that the project's building designs are anticipated to be consistent with my assumptions. The EIR should be revised to include a more appropriate analysis of bird-window collision mortality.

O-LD2-90. The response refers me to Master Response 10. However, Master Response 10 does not address my comment about the EIR's application of a false CEQA standard related to the project's potential impacts to wildlife movement in the region. A wildlife movement corridor need not be identified and shown to be disrupted for a project to have significant impacts to wildlife movement in the region. Inserting tall structures into the aerohabitat of birds on either side of Mount Sutro Open Space Reserve is likely to disrupt the movement patterns of volant wildlife regardless of whether they are flying along an imagined or real corridor.

Nor does Master Response 10 address my comments on the project's impacts to wildlife movement in terms of energetic costs and potential increased risk of predation. Imposing tall structures into the airspace used by volant wildlife forces changes to flight patterns and exposes many species to the hazards of predation by animals known to exploit such settings. The EIR needs to be revised to address these issues.

O-LD2-91. The response refers me to response O-LD2-34.

Regarding the issue of bird-window collisions, which I raised in my comment letter of 1 September 2020, the response O-LD2-34 claims, "...no federal or State law protects birds from strike impacts." Wildlife protection laws generally do not specify modes of take; they specify that take is not allowed without an incidental take permit or an exemption granted by the designated enforcement authority. I have participated with prosecutions of those who killed birds by striking them with their wind turbine blades, and I have participated with lawsuits directed at those who contaminated birds with plutonium and oil. In my experience, wildlife protection laws are enforced in situations where violations are of large magnitude and could have been largely prevented through appropriate analysis and mitigation. In my experience, the question of whether due

diligence was applied has factored into prosecutions and lawsuits over impacts to wildlife.

In this case, CEQA's purpose and its primary objectives can lay the foundation of due diligence that an enforcement authority can use to determine whether to prosecute violations of wildlife protection laws. CEQA's purpose is to maximize environmental protection by requiring that project impacts be avoided or mitigated to the greatest extent reasonably possible. A primary objective is for the lead agency to publicly disclose potential environmental impacts of a proposed project so that decision-makers and the public can make more informed decisions over whether and how to proceed with a proposed project. Another objective is to consider public comment for the purpose of identifying issues and feasible alternative mitigation measures. With my comments, I have identified issues, predicted the magnitude of a potentially significant impact, and identified feasible alternative mitigation measures. A foundation has been laid for later determination of whether the project egregiously vi0lated wildlife protection laws.

Response O-LD2-34 adds, "UCSF is not subject to local land use regulation whenever using land under its control in furtherance of its educational mission." Again, I refer to CEQA's purpose to maximize environmental protection by requiring that project impacts be avoided or mitigated to the greatest extent reasonably possible. The City of San Francisco's (2011) bird-safe guidance was designed, essentially, to achieve CEQA's purpose. The guidelines are not unreasonable, and their full implementation would protect birds to the maximum extent based on what was known about the bird-window collision issue at the time. According to CEQA Public Resources Code § 21002, "...public agencies should not approve projects as proposed if there are feasible alternatives or feasible mitigation measures available which would substantially lessen the significant environmental effects of such projects."

Response O-LD2-34 claims that its mitigation measures would protect birds from window collisions to the maximum extent feasible. It further characterizes its mitigation measures as magnanimous of the University because the University is not obliged to abide by local land-use regulations. However, the proposed mitigation cannot possibly avoid impacts to birds to the maximum extent feasible, because the University's mitigation is much lesser than that of City of San Francisco's (2011) bird-safe guidance, which was itself essentially formulated to avoid impacts to the maximum extent feasible. The response is akin to a runner claiming to have won the marathon after finishing the first mile of the race. The EIR needs to be revised to implement all of City of San Francisco's (2011) bird-safe guidance as a starting point, and then it should add the measures I recommend.

Response O-LD2-34 concludes "While buildout of the CPHP would increase the likelihood of bird strikes from the larger structures, in the context of the Pacific Flyway, used by an estimated billion birds per year, these impacts are minor, and not cumulatively considerable." It is just this type of reasoning that has contributed to the 29% loss of birds over the last 48 years in North America (Rosenberg et al. 2019). Comparison of collision fatalities caused by the project to the numbers of birds using the

Pacific Flyway skips over the impacts to demographic units that matter, such as to the family unit, deme, and population (Smallwood 2001). To be consistent and appropriate, the scope of the cumulative effects analysis needs to match the scope of the cumulative impacts. If the Pacific Flyway is to be scope of the analysis as the response establishes, then the estimate of bird-window collision mortality across the entire Pacific Flyway must be compared to the number of birds using the Pacific Flyway. Alternatively, and more appropriately, the scope would be City of San Francisco, so the comparison would be the cumulative number of birds killed by the City's windows to the numbers of birds moving through the City annually. The EIR's error is in comparing the scope of the project's window-caused mortality to the scope of the Pacific Flyway.

Response O-LD2-34 also concludes, "A study estimating fatality rates for birds for all San Francisco buildings recently built, planned, or foreseeable, is not required for this EIR." I did not suggest that such a study is required, but I did assert that it would appropriately inform decision-makers and the public of potential cumulative impacts to birds caused by window collisions. Bird-window collisions is one of the principal impacts to biological resources from the proposed project, so it is reasonable to estimate cumulative fatalities of birds that collide with windows across San Francisco. Such a study would not be difficult, and could be performed through sampling to estimate the extent of windows in the City now and in the foreseeable future. The alternative adopted by the University to this point is to acknowledge that many birds collide with windows but otherwise to offer absolutely no estimate of the magnitude of the impact. This alternative falls far short of due diligence.

O-LD2-92. The response refers me to response O-LD2-35.

According to response O-LD2-35, "While the commenter is correct regarding the difficulty of identifying bird nests and bat roosts in dense vegetation, however, CPHP Mitigation Measures BIO-1c and BIO-1d require a qualified biologist to perform the survey, who is experienced in identification of active nests and roosts." My comment about the difficulty of locating bird nests and bat roosts applies to all biologists, including those experienced with such surveys. But in my experience, the biologists who are deployed by consulting firms to perform these frustratingly unproductive surveys are typically the newest biologists to the firm and those with the least experience with searching for bird nests or bat roosts. Mitigation Measures BIO-1c and -1d could be improved by explicitly detailing the minimum qualifications of biologists who would perform these surveys. If recently-degreed biologists are to be deployed, then they should be accompanied by senior biologists with demonstrated experience in searching for bird nests or bat roosts.

Response O-LD2-35 also states, "The preconstruction bat surveys identified in CPHP Mitigation Measure BIO-1d will detect signs of current or recent bat use, or potential for bat presence, and are based on survey methodologies that meet California Department of Fish and Wildlife guidance." It would help to identify the CDFW guidance.

The response did not address my comment about the need for detection surveys. Detection surveys are needed to inform readers of the EIR of potential impacts and appropriate mitigation. They are also needed to inform preconstruction surveys.

O-LD2-93. The response refers me to Master Response 10. However, Master Response 10 does not address my comments on mitigation efficacy associated with measures outlined in City of San Francisco's (2011) bird-safe guidance document nor with recent actions to reduce bird mortality at existing buildings. It ignores my comments on the mitigation efficacy and cost at New York's Javits Center. Since my comments of 1 September 2020, City of Portland Bureau of Environmental Services and Portland Audubon (2020) reduced bird collision fatalities 94% by affixing marked Solyx window film to existing glass panels of Portland's Columbia Building. This and other measures have been developed since City of San Francisco (2011), and ought to be included as candidate mitigation measures in the EIR. Otherwise, see my earlier replies to Master Response 10.

O-LD2-94. The response refers me to Master Response 10. Master Response 10, however, does not address my comments on macro- and micro-siting of project buildings to minimize impacts to wildlife. The current stage of planning is the stage when the most important decisions can be made to minimize project impacts to wildlife. Decisions over where buildings should be constructed, and of what size and orientation, and including what types and extents of glass are the most critical for minimizing impacts to wildlife. At minimum, the EIR needs to include a decision-making framework to guide where buildings would be constructed and their heights and management of glass. This framework should be responsive to flight behavior surveys of birds and bats within the project area. At least three years of flight behavior surveys would be preferable because three years would be more likely to capture inter-annual variation in relative abundance and flight patterns of bird and bat species.

Thank you for your attention,

Shawn Smallwood

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Shawn Smallwood, Ph.D.

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Kenneth Shawn Smallwood
Curriculum Vitae

3108 Finch Street
Davis, CA 95616
Phone (530) 756-4598
Cell (530) 601-6857
puma@dcn.org

Born May 3, 1963 in
Sacramento, California.
Married, father of two.

Ecologist

Expertise

- Finding solutions to controversial problems related to wildlife interactions with human industry, infrastructure, and activities;
- Wildlife monitoring and field study using GPS, thermal imaging, behavior surveys;
- Using systems analysis and experimental design principles to identify meaningful ecological patterns that inform management decisions.

Education

Ph.D. Ecology, University of California, Davis. September 1990.
M.S. Ecology, University of California, Davis. June 1987.
B.S. Anthropology, University of California, Davis. June 1985.
Corcoran High School, Corcoran, California. June 1981.

Experience

- 665 professional publications, including:
- 88 peer reviewed publications
- 24 in non-reviewed proceedings
- 551 reports, declarations, posters and book reviews
- 8 in mass media outlets
- 87 public presentations of research results

Editing for scientific journals: Guest Editor, *Wildlife Society Bulletin*, 2012-2013, of invited papers representing international views on the impacts of wind energy on wildlife and how to mitigate the impacts. Associate Editor, *Journal of Wildlife Management*, March 2004 to 30 June 2007. Editorial Board Member, *Environmental Management*, 10/1999 to 8/2004. Associate Editor, *Biological Conservation*, 9/1994 to 9/1995.

Member, Alameda County Scientific Review Committee (SRC), August 2006 to April 2011. The five-member committee investigated causes of bird and bat collisions in the Altamont Pass Wind Resource Area, and recommended mitigation and monitoring measures. The SRC reviewed the science underlying the Alameda County Avian Protection Program, and advised

the County on how to reduce wildlife fatalities.

Consulting Ecologist, 2004-2007, California Energy Commission (CEC). Provided consulting services as needed to the CEC on renewable energy impacts, monitoring and research, and produced several reports. Also collaborated with Lawrence-Livermore National Lab on research to understand and reduce wind turbine impacts on wildlife.

Consulting Ecologist, 1999-2013, U.S. Navy. Performed endangered species surveys, hazardous waste site monitoring, and habitat restoration for the endangered San Joaquin kangaroo rat, California tiger salamander, California red-legged frog, California clapper rail, western burrowing owl, salt marsh harvest mouse, and other species at Naval Air Station Lemoore; Naval Weapons Station, Seal Beach, Detachment Concord; Naval Security Group Activity, Skaggs Island; National Radio Transmitter Facility, Dixon; and, Naval Outlying Landing Field Imperial Beach.

Part-time Lecturer, 1998-2005, California State University, Sacramento. Instructed Mammalogy, Behavioral Ecology, and Ornithology Lab, Contemporary Environmental Issues, Natural Resources Conservation.

Senior Ecologist, 1999-2005, BioResource Consultants. Designed and implemented research and monitoring studies related to avian fatalities at wind turbines, avian electrocutions on electric distribution poles across California, and avian fatalities at transmission lines.

Chairman, Conservation Affairs Committee, The Wildlife Society--Western Section, 1999-2001. Prepared position statements and led efforts directed toward conservation issues, including travel to Washington, D.C. to lobby Congress for more wildlife conservation funding.

Systems Ecologist, 1995-2000, Institute for Sustainable Development. Headed ISD's program on integrated resources management. Developed indicators of ecological integrity for large areas, using remotely sensed data, local community involvement and GIS.

Associate, 1997-1998, Department of Agronomy and Range Science, University of California, Davis. Worked with Shu Geng and Mingua Zhang on several studies related to wildlife interactions with agriculture and patterns of fertilizer and pesticide residues in groundwater across a large landscape.

Lead Scientist, 1996-1999, National Endangered Species Network. Informed academic scientists and environmental activists about emerging issues regarding the Endangered Species Act and other environmental laws. Testified at public hearings on endangered species issues.

Ecologist, 1997-1998, Western Foundation of Vertebrate Zoology. Conducted field research to determine the impact of past mercury mining on the status of California red-legged frogs in Santa Clara County, California.

Senior Systems Ecologist, 1994-1995, EIP Associates, Sacramento, California. Provided consulting services in environmental planning, and quantitative assessment of land units for their conservation and restoration opportunities basedon ecological resource requirements of 29 special-status species. Developed ecological indicators for prioritizing areas within Yolo County

to receive mitigation funds for habitat easements and restoration.

Post-Graduate Researcher, 1990-1994, Department of Agronomy and Range Science*, U.C. Davis*. Under Dr. Shu Geng's mentorship, studied landscape and management effects on temporal and spatial patterns of abundance among pocket gophers and species of Falconiformes and Carnivora in the Sacramento Valley. Managed and analyzed a data base of energy use in California agriculture. Assisted with landscape (GIS) study of groundwater contamination across Tulare County, California.

Work experience in graduate school: Co-taught Conservation Biology with Dr. Christine Schonewald, 1991 & 1993, UC Davis Graduate Group in Ecology; Reader for Dr. Richard Coss's course on Psychobiology in 1990, UC Davis Department of Psychology; Research Assistant to Dr. Walter E. Howard, 1988-1990, UC Davis Department of Wildlife and Fisheries Biology, testing durable baits for pocket gopher management in forest clearcuts; Research Assistant to Dr. Terrell P. Salmon, 1987-1988, UC Wildlife Extension, Department of Wildlife and Fisheries Biology, developing empirical models of mammal and bird invasions in North America, and a rating system for priority research and control of exotic species based on economic, environmental and human health hazards in California. Student Assistant to Dr. E. Lee Fitzhugh, 1985-1987, UC Cooperative Extension, Department of Wildlife and Fisheries Biology, developing and implementing statewide mountain lion track count for long-term monitoring.

Fulbright Research Fellow, Indonesia, 1988. Tested use of new sampling methods for numerical monitoring of Sumatran tiger and six other species of endemic felids, and evaluated methods used by other researchers.

Projects

Repowering wind energy projects through careful siting of new wind turbines using map-based collision hazard models to minimize impacts to volant wildlife. Funded by wind companies (principally NextEra Renewable Energy, Inc.), California Energy Commission and East Bay Regional Park District, I have collaborated with a GIS analyst and managed a crew of five field biologists performing golden eagle behavior surveys and nocturnal surveys on bats and owls. The goal is to quantify flight patterns for development of predictive models to more carefully site new wind turbines in repowering projects. Focused behavior surveys began May 2012 and continue. Collision hazard models have been prepared for seven wind projects, three of which were built. Planning for additional repowering projects is underway.

Test avian safety of new mixer-ejector wind turbine (MEWT). Designed and implemented a before-after, control-impact experimental design to test the avian safety of a new, shrouded wind turbine developed by Ogin Inc. (formerly known as FloDesign Wind Turbine Corporation). Supported by a $718,000 grant from the California Energy Commission's Public Interest Energy Research program and a 20% match share contribution from Ogin, I managed a crew of seven field biologists who performed periodic fatality searches and behavior surveys, carcass detection trials, nocturnal behavior surveys using a thermal camera, and spatial analyses with the collaboration of a GIS analyst. Field work began 1 April 2012 and ended 30 March 2015 without Ogin installing its MEWTs, but we still achieved multiple important scientific advances.

Reduce avian mortality due to wind turbines at Altamont Pass. Studied wildlife impacts caused by 5,400 wind turbines at the world's most notorious wind resource area. Studied how impacts are perceived by monitoring and how they are affected by terrain, wind patterns, food resources, range management practices, wind turbine operations, seasonal patterns, population cycles, infrastructure management such as electric distribution, animal behavior and social interactions.

Reduce avian mortality on electric distribution poles. Directed research toward reducing bird electrocutions on electric distribution poles, 2000-2007. Oversaw 5 founds of fatality searches at 10,000 poles from Orange County to Glenn County, California, and produced two large reports.

Cook *et al*. v. Rockwell International *et al*., No. 90-K-181 (D. Colorado). Provided expert testimony on the role of burrowing animals in affecting the fate of buried and surface-deposited radioactive and hazardous chemical wastes at the Rocky Flats Plant, Colorado. Provided expert reports based on four site visits and an extensive document review of burrowing animals. Conducted transect surveys for evidence of burrowing animals and other wildlife on and around waste facilities. Discovered substantial intrusion of waste structures by burrowing animals. I testified in federal court in November 2005, and my clients were subsequently awarded a $553,000,000 judgment by a jury. After appeals the award was increased to two billion dollars.

Hanford Nuclear Reservation Litigation. Provided expert testimony on the role of burrowing animals in affecting the fate of buried radioactive wastes at the Hanford Nuclear Reservation, Washington. Provided three expert reports based on three site visits and extensive document review. Predicted and verified a certain population density of pocket gophers on buried waste structures, as well as incidence of radionuclide contamination in body tissue. Conducted transect surveys for evidence of burrowing animals and other wildlife on and around waste facilities. Discovered substantial intrusion of waste structures by burrowing animals.

Expert testimony and declarations on proposed residential and commercial developments, gas-fired power plants, wind, solar and geothermal projects, water transfers and water transfer delivery systems, endangered species recovery plans, Habitat Conservation Plans and Natural Communities Conservation Programs. Testified before multiple government agencies, Tribunals, Boards of Supervisors and City Councils, and participated with press conferences and depositions. Prepared expert witness reports and court declarations, which are summarized under Reports (below).

Protocol-level surveys for special-status species. Used California Department of Fish and Wildlife and US Fish and Wildlife Service protocols to search for California red-legged frog, California tiger salamander, arroyo southwestern toad, blunt-nosed leopard lizard, western pond turtle, giant kangaroo rat, San Joaquin kangaroo rat, San Joaquin kit fox, western burrowing owl, Swainson's hawk, Valley elderberry longhorn beetle and other special-status species.

Conservation of San Joaquin kangaroo rat. Performed research to identify factors responsible for the decline of this endangered species at Lemoore Naval Air Station, 2000-2013, and implemented habitat enhancements designed to reverse the trend and expand the population.

Impact of West Nile Virus on yellow-billed magpies. Funded by Sacramento-Yolo Mosquito and Vector Control District, 2005-2008, compared survey results pre- and post-West Nile Virus epidemic for multiple bird species in the Sacramento Valley, particularly on yellow-billed magpie and American crow due to susceptibility to WNV.

Workshops on HCPs. Assisted Dr. Michael Morrison with organizing and conducting a 2-day workshop on Habitat Conservation Plans, sponsored by Southern California Edison, and another 1-day workshop sponsored by PG&E. These Workshops were attended by academics, attorneys, and consultants with HCP experience. We guest-edited a Proceedings published in Environmental Management.

Mapping of biological resources along Highways 101, 46 and 41. Used GPS and GIS to delineate vegetation complexes and locations of special-status species along 26 miles of highway in San Luis Obispo County, 14 miles of highway and roadway in Monterey County, and in a large area north of Fresno, including within reclaimed gravel mining pits.

GPS mapping and monitoring at restoration sites and at Caltrans mitigation sites. Monitored the success of elderberry shrubs at one location, the success of willows at another location, and the response of wildlife to the succession of vegetation at both sites. Also used GPS to monitor the response of fossorial animals to yellow star-thistle eradication and natural grassland restoration efforts at Bear Valley in Colusa County and at the decommissioned Mather Air Force Base in Sacramento County.

Mercury effects on Red-legged Frog. Assisted Dr. Michael Morrison and US Fish and Wildlife Service in assessing the possible impacts of historical mercury mining on the federally listed California red-legged frog in Santa Clara County. Also measured habitat variables in streams.

Opposition to proposed No Surprises rule. Wrote a white paper and summary letter explaining scientific grounds for opposing the incidental take permit (ITP) rules providing ITP applicants and holders with general assurances they will be free of compliance with the Endangered Species Act once they adhere to the terms of a "properly functioning HCP." Submitted 188 signatures of scientists and environmental professionals concerned about No Surprises rule US Fish and Wildlife Service, National Marine Fisheries Service, all US Senators.

Natomas Basin Habitat Conservation Plan alternative. Designed narrow channel marsh to increase the likelihood of survival and recovery in the wild of giant garter snake, Swainson's hawk and Valley Elderberry Longhorn Beetle. The design included replication and interspersion of treatments for experimental testing of critical habitat elements. I provided a report to Northern Territories, Inc.

Assessments of agricultural production system and environmental technology transfer to China. Twice visited China and interviewed scientists, industrialists, agriculturalists, and the Directors of the Chinese Environmental Protection Agency and the Department of Agriculture to assess the need and possible pathways for environmental clean-up technologies and trade opportunities between the US and China.

Yolo County Habitat Conservation Plan. Conducted landscape ecology study of Yolo County to spatially prioritize allocation of mitigation efforts to improve ecosystem functionality within the County from the perspective of 29 special-status species of wildlife and plants. Used a hierarchically structured indicators approach to apply principles of landscape and ecosystem ecology, conservation biology, and local values in rating land units. Derived GIS maps to help guide the conservation area design, and then developed implementation strategies.

Mountain lion track count. Developed and conducted a carnivore monitoring program throughout California since 1985. Species counted include mountain lion, bobcat, black bear, coyote, red and gray fox, raccoon, striped skunk, badger, and black-tailed deer. Vegetation and land use are also monitored. Track survey transect was established on dusty, dirt roads within randomly selected quadrats.

Sumatran tiger and other felids. Upon award of Fulbright Research Fellowship, I designed and initiated track counts for seven species of wild cats in Sumatra, including Sumatran tiger, fishing cat, and golden cat. Spent four months on Sumatra and Java in 1988, and learned Bahasa Indonesia, the official Indonesian language.

Wildlife in agriculture. Beginning as post-graduate research, I studied pocket gophers and other wildlife in 40 alfalfa fields throughout the Sacramento Valley, and I surveyed for wildlife along a 200 mile road transect since 1989 with a hiatus of 1996-2004. The data are analyzed using GIS and methods from landscape ecology, and the results published and presented orally to farming groups in California and elsewhere. I also conducted the first study of wildlife in cover crops used on vineyards and orchards.

Agricultural energy use and Tulare County groundwater study. Developed and analyzed a data base of energy use in California agriculture, and collaborated on a landscape (GIS) study of groundwater contamination across Tulare County, California.

Pocket gopher damage in forest clear-cuts. Developed gopher sampling methods and tested various poison baits and baiting regimes in the largest-ever field study of pocket gopher management in forest plantations, involving 68 research plots in 55 clear-cuts among 6 National Forests in northern California.

Risk assessment of exotic species in North America. Developed empirical models of mammal and bird species invasions in North America, as well as a rating system for assigning priority research and control to exotic species in California, based on economic, environmental, and human health hazards.

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- Clawiter Road Industrial Project IS/MND, Hayward (2021; 18);
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- Heritage Wind Energy Project, New York (2020: 71);
- Ameresco Keller Canyon RNG Project IS/MND, Martinez (2020; 11);
- Cambria Hotel Project Staff Report, Dublin (2020; 19);
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- Oak Valley Town Center EIR Addendum, Calimesa (2020; 23);

- Coachillin Specific Plan MND Amendment, Desert Hot Springs (2020; 26);
- Stockton Avenue Hotel and Condominiums Project Tiering to EIR, San Jose (2020; 19);
- Cityline Sub-block 3 South Staff Report, Sunyvale (2020; 22);
- Station East Residential/Mixed Use EIR, Union City (2020; 21);
- Multi-Sport Complex & Southeast Industrial Annexation Suppl. EIR, Elk Grove (2020; 24);
- Sun Lakes Village North EIR Amendment 5, Banning, Riverside County (2020; 27);
- 2nd comments on 1296 Lawrence Station Road, Sunnyvale (2020; 4);
- 1296 Lawrence Station Road, Sunnyvale (2020; 16);
- Mesa Wind Project EA, Desert Hot Springs (2020; 31);
- 11th Street Development Project IS/MND, City of Upland (2020; 17);
- Vista Mar Project IS/MND, Pacifica (2020; 17);
- Emerson Creek Wind Project Application, Ohio (2020; 64);
- Replies on Wister Solar Energy Facility EIR, Imperial County (2020; 12);
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- Sakioka Farms EIR tiering, Oxnard (2020; 14);
- 3440 Wilshire Project IS/MND, Los Angeles (2020; 19);
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- Declaration on DDG Visalia Warehouse project (2020; 5);
- Terraces of Lafayette EIR Addendum (2020; 24);
- AMG Industrial Annex IS/MND, Los Banos (2020; 15);
- Replies to responses on Casmalia and Linden Warehouse (2020; 15);
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- Replies to responses on 3721 Mt. Diablo Boulevard Staff Report (2020; 5);
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- Steeno Warehouse IS/MND, Hesperia (2020; 19);
- UCSF Comprehensive Parnassus Heights Plan EIR (2020; 24);
- North Pointe Business Center MND, Fresno (2020; 14);
- Casmalia and Linden Warehouse IS, Fontana (2020; 15);
- Rubidoux Commerce Center Project IS/MND, Jurupa Valley (2020; 27);
- Haun and Holland Mixed Use Center MND, Menifee (2020; 23);
- First Industrial Logistics Center II, Moreno Valley IS/MND (2020; 23);
- GLP Store Warehouse Project Staff Report (2020; 15);
- Replies on Beale WAPA Interconnection Project EA & CEQA checklist (2020; 29);
- 2nd comments on Beale WAPA Interconnection Project EA & CEQA checklist (2020; 34);
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- Levine-Fricke Softball Field Improvement Addendum, UC Berkeley (2020; 16);
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- Sand Hill Supplemental EIR, Altamont Pass (2019; 17);
- 1700 Dell Avenue Office Project, Campbell (2019, 28);
- 1180 Main Street Office Project MND, Redwood City (2019; 19:
- Summit Ridge Wind Farm Request for Amendment 4, Oregon (2019; 46);
- Shafter Warehouse Staff Report (2019; 4);
- Park & Broadway Design Review, San Diego (2019; 19);
- Pinnacle Pacific Heights Design Review, San Diego (2019; 19);
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- Santana West Project EIR Addendum, San Jose (2019; 18);
- The Ranch at Eastvale EIR Addendum, Riverside County (2020; 19);
- Hageman Warehouse IS/MND, Bakersfield (2019; 13);
- Oakley Logistics Center EIR, Antioch (2019; 22);
- 27 South First Street IS, San Jose (2019; 23);
- 2nd replies on Times Mirror Square Project EIR, Los Angeles (2020; 11);
- Replies on Times Mirror Square Project EIR, Los Angeles (2020; 13);
- Times Mirror Square Project EIR, Los Angeles (2019; 18);
- East Monte Vista & Aviator General Plan Amend EIR Addendum, Vacaville (2019; 22);
- Hillcrest LRDP EIR, La Jolla (2019; 36);
- 555 Portola Road CUP, Portola Valley (2019; 11);
- Johnson Drive Economic Development Zone SEIR, Pleasanton (2019; 27);
- 1750 Broadway Project CEQA Exemption, Oakland (2019; 19);
- Mor Furniture Project MND, Murietta Hot Springs (2019; 27);
- Harbor View Project EIR, Redwood City (2019; 26);
- Visalia Logistics Center (2019; 13);
- Cordelia Industrial Buildings MND (2019; 14);
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- World Logistics Center Site Visit, Moreno Valley (2019; 19);
- Merced Landfill Gas-To-Energy Project IS/MND (2019; 12);
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- Replies to responses on Avalon West Valley Expansion EIR, San Jose (2019; 10);
- Avalon West Valley Expansion EIR, San Jose (2019; 22);
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- Del Rey Pointe Residential Project IS/MND, Los Angeles (2019; 34);
- 1 AMD Redevelopment EIR, Sunnyvale (2019; 22);
- Lawrence Equipment Industrial Warehouse IS/MND, Banning (2019; 14);
- SDG Commerce 330 Warehouse IS, American Canyon (2019; 21);
- PAMA Business Center IS/MND, Moreno Valley (2019; 23);
- Cupertino Village Hotel IS (2019; 24);
- Lake House IS/ND, Lodi (2019; 33);
- Campo Wind Project DEIS, San Diego County (DEIS, (2019; 14);
- Stirling Warehouse MND site visit, Victorville (2019; 7);
- Green Valley II Mixed-Use Project EIR, Fairfield (2019; 36);
- We Be Jammin rezone MND, Fresno (2019; 14);
- Gray Whale Cove Pedestrian Crossing IS/ND, Pacifica (2019; 7);
- Visalia Logistics Center & DDG 697V Staff Report (2019; 9);
- Mather South Community Masterplan Project EIR (2019; 35);
- Del Hombre Apartments EIR, Walnut Creek (2019; 23);
- Otay Ranch Planning Area 12 EIR Addendum, Chula Vista (2019; 21);
- The Retreat at Sacramento IS/MND (2019; 26);
- Site visit to Sunroad – Centrum 6 EIR Addendum, San Diego (2019; 9);
- Sunroad – Centrum 6 EIR Addendum, San Diego (2018; 22);
- North First and Brokaw Corporate Campus Buildings EIR Addendum, San Jose (2018; 30);
- South Lake Solar IS, Fresno County (2018; 18);
- Galloo Island Wind Project Application, New York (not submitted) (2018; 44);
- Doheny Ocean Desalination EIR, Dana Point (2018; 15);
- Stirling Warehouse MND, Victorville (2018; 18);
- LDK Warehouse MND, Vacaville (2018; 30);
- Gateway Crossings FEIR, Santa Clara (2018; 23);
- South Hayward Development IS/MND (2018; 9);
- CBU Specific Plan Amendment, Riverside (2018; 27);
- 2nd replies to responses on Dove Hill Road Assisted Living Project MND (2018; 11);
- Replies to responses on Dove Hill Road Assisted Living Project MND (2018; 7);
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- Deer Ridge/Shadow Lakes Golf Course EIR, Brentwood (2018; 21);
- Pyramid Asphalt BLM Finding of No Significance, Imperial County (2018; 22);
- Amáre Apartments IS/MND, Martinez (2018; 15);
- Petaluma Hill Road Cannabis MND, Santa Rosa (2018; 21);
- 2nd comments on Zeiss Innovation Center IS/MND, Dublin (2018: 12);
- Zeiss Innovation Center IS/MND, Dublin (2018: 32);
- City of Hope Campus Plan EIR, Duarte (2018; 21);
- Palo Verde Center IS/MND, Blythe (2018; 14);
- Logisticenter at Vacaville MND (2018; 24);
- IKEA Retail Center SEIR, Dublin (2018; 17);
- Merge 56 EIR, San Diego (2018; 15);
- Natomas Crossroads Quad B Office Project P18-014 EIR, Sacramento (2018; 12);
- 2900 Harbor Bay Parkway Staff Report, Alameda (2018; 30);

- At Dublin EIR, Dublin (2018; 25);
- Fresno Industrial Rezone Amendment Application No. 3807 IS (2018; 10);
- Nova Business Park IS/MND, Napa (2018; 18);
- Updated Collision Risk Model Priors for Estimating Eagle Fatalities, USFWS (2018; 57);
- 750 Marlborough Avenue Warehouse MND, Riverside (2018; 14);
- Replies to responses on San Bernardino Logistics Center IS (2018; 12);
- San Bernardino Logistics Center IS (2018; 19);
- CUP2017-16, Costco IS/MND, Clovis (2018; 11);
- Desert Land Ventures Specific Plan EIR, Desert Hot Springs (2018; 18);
- Ventura Hilton IS/MND (2018; 30);
- North of California Street Master Plan Project IS, Mountain View (2018: 11);
- Tamarind Warehouse MND, Fontana (2018; 16);
- Lathrop Gateway Business Park EIR Addendum (2018; 23);
- Centerpointe Commerce Center IS, Moreno Valley (2019; 18);
- Amazon Warehouse Notice of Exemption, Bakersfield (2018; 13);
- CenterPoint Building 3 project Staff Report, Manteca (2018; 23);
- Cessna & Aviator Warehouse IS/MND, Vacaville (2018; 24);
- Napa Airport Corporate Center EIR, American Canyon (2018, 15);
- 800 Opal Warehouse Initial Study, Mentone, San Bernardino County (2018; 18);
- 2695 W. Winton Ave Industrial Project IS, Hayward (2018; 22);
- Trinity Cannabis Cultivation and Manufacturing Facility DEIR, Calexico (2018; 15);
- Shoe Palace Expansion IS/MND, Morgan Hill (2018; 21);
- Newark Warehouse at Morton Salt Plant Staff Report (2018; 15);
- Northlake Specific Plan FEIR "Peer Review", Los Angeles County (2018; 9);
- Replies to responses on Northlake Specific Plan SEIR, Los Angeles County (2018; 13);
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- Bogle Wind Turbine DEIR, east Yolo County (2017; 48);
- Ferrante Apartments IS/MND, Los Angeles (2017; 14);
- The Villages of Lakeview EIR, Riverside (2017; 28);
- Data Needed for Assessing Trail Management Impacts on Northern Spotted Owl, Marin County (2017; 5);
- Notes on Proposed Study Options for Trail Impacts on Northern Spotted Owl (2017; 4);
- Pyramid Asphalt IS, Imperial County (Declaration) (2017; 5);
- San Gorgonio Crossings EIR, Riverside County (2017; 22);
- Replies to responses on Jupiter Project IS and MND, Apple Valley (2017; 12);
- Proposed World Logistics Center Mitigation Measures, Moreno Valley (2017, 2019; 12);
- MacArthur Transit Village Project Modified 2016 CEQA Analysis (2017; 12);
- PG&E Company Bay Area Operations and Maintenance HCP (2017; 45);
- Central SoMa Plan DEIR (2017; 14);
- Suggested mitigation for trail impacts on northern spotted owl, Marin County (2016; 5);
- Colony Commerce Center Specific Plan DEIR, Ontario (2016; 16);
- Fairway Trails Improvements MND, Marin County (2016; 13);
- Review of Avian-Solar Science Plan (2016; 28);
- Replies on Pyramid Asphalt IS, Imperial County (2016; 5);

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- Agua Mansa Distribution Warehouse Project Initial Study (2016; 14);
- Santa Anita Warehouse MND, Rancho Cucamonga (2016; 12);
- CapRock Distribution Center III DEIR, Rialto (2016: 12);
- Orange Show Logistics Center IS/MND, San Bernardino (2016; 9);
- City of Palmdale Oasis Medical Village Project IS/MND (2016; 7);
- Comments on proposed rule for incidental eagle take, USFWS (2016, 49);
- Replies on Grapevine Specific and Community Plan FEIR, Kern County (2016; 25);
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- Clinton County Zoning Ordinance for Wind Turbine siting (2016);
- Hallmark at Shenandoah Warehouse Project Initial Study, San Bernardino (2016; 6);
- Tri-City Industrial Complex Initial Study, San Bernardino (2016; 5);
- Hidden Canyon Industrial Park Plot Plan 16-PP-02, Beaumont (2016; 12);
- Kimball Business Park DEIR (2016; 10);
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- Revised Draft Giant Garter Snake Recovery Plan of 2015 (2016, 18);
- Palo Verde Mesa Solar Project EIR, Blythe (2016; 27);
- Reply on Fairview Wind Project Natural Heritage Assessment, Ontario, Canada (2016; 14);
- Fairview Wind Project Natural Heritage Assessment, Ontario, Canada (2016; 41);
- Reply on Amherst Island Wind Farm Natural Heritage Assessment, Ontario (2015, 38);
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- Second Reply on White Pines Wind Farm, Ontario (2015, 6);
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- Willow Springs Solar Photovoltaic Project DEIR, Rosamond (2015; 28);
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- Willow Springs Solar Photovoltaic Project DEIR (2015, 28);
- Alameda Creek Bridge Replacement Project DEIR (2015, 10);
- World Logistic Center Specific Plan FEIR, Moreno Valley (2015, 12);
- Elkhorn Valley Wind Power Project Impacts, Oregon (2015; 143);
- Bay Delta Conservation Plan EIR/EIS, Sacramento (2014, 21);
- Addison Wind Energy Project DEIR, Mojave (2014, 32);
- Replies on the Addison Wind Energy Project DEIR, Mojave (2014, 15);
- Addison and Rising Tree Wind Energy Project FEIR, Mojave (2014, 12);
- Palen Solar Electric Generating System FSA (CEC), Blythe (2014, 20);
- Rebuttal testimony on Palen Solar Energy Generating System (2014, 9);
- Seven Mile Hill and Glenrock/Rolling Hills impacts + Addendum, Wyoming (2014; 105);
- Rising Tree Wind Energy Project DEIR, Mojave (2014, 32);
- Replies on the Rising Tree Wind Energy Project DEIR, Mojave (2014, 15);
- Soitec Solar Development Project PEIR, Boulevard, San Diego County (2014, 18);

- Oakland Zoo expansion on Alameda whipsnake and California red-legged frog (2014; 3);
- Alta East Wind Energy Project FEIS, Tehachapi Pass (2013, 23);
- Blythe Solar Power Project Staff Assessment, California Energy Commission (2013, 16);
- Clearwater and Yakima Solar Projects DEIR, Kern County (2013, 9);
- West Antelope Solar Energy Project IS/MND, Antelope Valley (2013, 18);
- Cuyama Solar Project DEIR, Carrizo Plain (2014, 19);
- Desert Renewable Energy Conservation Plan (DRECP) EIR/EIS (2015, 49);
- Kingbird Solar Photovoltaic Project EIR, Kern County (2013, 19);
- Lucerne Valley Solar Project IS/MND, San Bernardino County (2013, 12);
- Tule Wind project FEIR/FEIS (Declaration) (2013; 31);
- Sunlight Partners LANDPRO Solar Project MND (2013; 11);
- Declaration in opposition to BLM fracking (2013; 5);
- Blythe Energy Project (solar) CEC Staff Assessment (2013;16);
- Rosamond Solar Project EIR Addendum, Kern County (2013; 13);
- Pioneer Green Solar Project EIR, Bakersfield (2013; 13);
- Replies on Soccer Center Solar Project MND (2013; 6);
- Soccer Center Solar Project MND, Lancaster (2013; 10);
- Plainview Solar Works MND, Lancaster (2013; 10);
- Alamo Solar Project MND, Mojave Desert (2013; 15);
- Replies on Imperial Valley Solar Company 2 Project (2013; 10);
- Imperial Valley Solar Company 2 Project (2013; 13);
- FRV Orion Solar Project DEIR, Kern County (PP12232) (2013; 9);
- Casa Diablo IV Geothermal Development Project (2013; 6);
- Reply on Casa Diablo IV Geothermal Development Project (2013; 8);
- Alta East Wind Project FEIS, Tehachapi Pass (2013; 23);
- Metropolitan Air Park DEIR, City of San Diego (2013;);
- Davidon Homes Tentative Subdivision Rezoning Project DEIR, Petaluma (2013; 9);
- Oakland Zoo Expansion Impacts on Alameda Whipsnake (2013; 10);
- Campo Verde Solar project FEIR, Imperial Valley (2013; 11pp);
- Neg Dec comments on Davis Sewer Trunk Rehabilitation (2013; 8);
- North Steens Transmission Line FEIS, Oregon (Declaration) (2012; 62);
- Summer Solar and Springtime Solar Projects Ism Lancaster (2012; 8);
- J&J Ranch, 24 Adobe Lane Environmental Review, Orinda (2012; 14);
- Replies on Hudson Ranch Power II Geothermal Project and Simbol Calipatria Plant II (2012; 8);
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- Solar Gen 2 Array Project DEIR, El Centro (2012; 16);
- Ocotillo Sol Project EIS, Imperial Valley (2012; 4);
- Beacon Photovoltaic Project DEIR, Kern County (2012; 5);
- Butte Water District 2012 Water Transfer Program IS/MND (2012; 11);
- Mount Signal and Calexico Solar Farm Projects DEIR (2011; 16);
- City of Elk Grove Sphere of Influence EIR (2011; 28);
- Sutter Landing Park Solar Photovoltaic Project MND, Sacramento (2011; 9);

- Rabik/Gudath Project, 22611 Coleman Valley Road, Bodega Bay (CPN 10-0002) (2011; 4);
- Ivanpah Solar Electric Generating System (ISEGS) (Declaration) (2011; 9);
- Draft Eagle Conservation Plan Guidance, USFWS (2011; 13);
- Niles Canyon Safety Improvement Project EIR/EA (2011; 16);
- Route 84 Safety Improvement Project (Declaration) (2011; 7);
- Rebuttal on Whistling Ridge Wind Energy Power DEIS, Skamania County, (2010; 6);
- Whistling Ridge Wind Energy Power DEIS, Skamania County, Washington (2010; 41);
- Klickitat County's Decisions on Windy Flats West Wind Energy Project (2010; 17);
- St. John's Church Project DEIR, Orinda (2010; 14);
- Results Radio Zone File #2009-001 IS/MND, Conaway site, Davis (2010; 20);
- Rio del Oro Specific Plan Project FEIR, Rancho Cordova (2010;12);
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- Answers to Questions on 33% RPS Implementation Analysis Preliminary Results Report (2009; 9);
- SEPA Determination of Non-significance regarding zoning adjustments for Skamania County, Washington (Second Declaration) (2008; 17);
- Draft 1A Summary Report to CAISO (2008; 10);
- Hilton Manor Project Categorical Exemption, County of Placer (2009; 9);
- Protest of CARE to Amendment to the Power Purchase and Sale Agreement for Procurement of Eligible Renewable Energy Resources Between Hatchet Ridge Wind LLC and PG&E (2009; 3);
- Tehachapi Renewable Transmission Project EIR/EIS (2009; 142);
- Delta Shores Project EIR, south Sacramento (2009; 11 + addendum 2);
- Declaration in Support of Care's Petition to Modify D.07-09-040 (2008; 3);
- The Public Utility Commission's Implementation Analysis December 16 Workshop for the Governor's Executive Order S-14-08 to implement a 33% Renewable Portfolio Standard by 2020 (2008; 9);
- The Public Utility Commission's Implementation Analysis Draft Work Plan for the Governor's Executive Order S-14-08 to implement a 33% Renewable Portfolio Standard by 2020 (2008; 11);
- Draft 1A Summary Report to California Independent System Operator for Planning Reserve Margins (PRM) Study (2008; 7.);
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- Colusa Generating Station, California Energy Commission PSA (2007; 24);
- Rio del Oro Specific Plan Project Recirculated DEIR, Mather (2008: 66);
- Replies on Regional University Specific Plan EIR, Roseville (2008; 20);
- Regional University Specific Plan EIR, Roseville (2008: 33);
- Clark Precast, LLC's "Sugarland" project, ND, Woodland (2008: 15);
- Cape Wind Project DEIS, Nantucket (2008; 157);
- Yuba Highlands Specific Plan EIR, Spenceville, Yuba County (2006; 37);
- Replies to responses on North Table Mountain MND, Butte County (2006; 5);
- North Table Mountain MND, Butte County (2006; 15);
- Windy Point Wind Farm EIS (2006; 14 and Powerpoint slide replies);
- Shiloh I Wind Power Project EIR, Rio Vista (2005; 18);

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- Callahan Estates Subdivision ND, Winters (2004; 11);
- Winters Highlands Subdivision IS/ND (2004; 9);
- Winters Highlands Subdivision IS/ND (2004; 13);
- Creekside Highlands Project, Tract 7270 ND (2004; 21);
- Petition to California Fish and Game Commission to list Burrowing Owl (2003; 10);
- Altamont Pass Wind Resource Area CUP renewals, Alameda County (2003; 41);
- UC Davis Long Range Development Plan: Neighborhood Master Plan (2003; 23);
- Anderson Marketplace Draft Environmental Impact Report (2003; 18);
- Negative Declaration of the proposed expansion of Temple B'nai Tikyah (2003; 6);
- Antonio Mountain Ranch Specific Plan Public Draft EIR (2002; 23);
- Replies on East Altamont Energy Center evidentiary hearing (2002; 9);
- Revised Draft Environmental Impact Report, The Promenade (2002; 7);
- Recirculated Initial Study for Calpine's proposed Pajaro Valley Energy Center (2002; 3);
- UC Merced -- Declaration (2002; 5);
- Replies on Atwood Ranch Unit III Subdivision FEIR (2003; 22);
- Atwood Ranch Unit III Subdivision EIR (2002; 19);
- California Energy Commission Staff Report on GWF Tracy Peaker Project (2002; 20);
- Silver Bend Apartments IS/MND, Placer County (2002; 13);
- UC Merced Long-range Development Plan DEIR and UC Merced Community Plan DEIR (2001; 26);
- Colusa County Power Plant IS, Maxwell (2001; 6);
- Dog Park at Catlin Park, Folsom, California (2001; 5);
- Calpine and Bechtel Corporations' Biological Resources Implementation and Monitoring Program (BRMIMP) for the Metcalf Energy Center (2000; 10);
- Metcalf Energy Center, California Energy Commission FSA (2000);
- US Fish and Wildlife Service Section 7 consultation with the California Energy Commission regarding Calpine and Bechtel Corporations' Metcalf Energy Center (2000; 4);
- California Energy Commission's Preliminary Staff Assessment of the proposed Metcalf Energy Center (2000: 11);
- Site-specific management plans for the Natomas Basin Conservancy's mitigation lands, prepared by Wildlands, Inc. (2000: 7);
- Affidavit of K. Shawn Smallwood in Spirit of the Sage Council, et al. (Plaintiffs) vs. Bruce Babbitt, Secretary, U.S. Department of the Interior, et al. (Defendants), Injuries caused by the No Surprises policy and final rule which codifies that policy (1999: 9).
- California Board of Forestry's proposed amended Forest Practices Rules (1999);
- Sunset Skyranch Airport Use Permit IS/MND (1999);
- Ballona West Bluffs Project Environmental Impact Report (1999; oral presentation);
- Draft Recovery Plan for Giant Garter Snake (Fed. Reg. 64(176): 49497-49498) (1999; 8);
- Draft Recovery Plan for Arroyo Southwestern Toad (1998);
- Pacific Lumber Co. (Headwaters) HCP & EIR, Fortuna (1998; 28);
- Natomas Basin HCP Permit Amendment, Sacramento (1998);
- San Diego Multi-Species Conservation Program FEIS/FEIR (1997; 10);

Comments on other Environmental Review Documents:

- Proposed Regulation for California Fish and Game Code Section 3503.5 (2015: 12);
- Statement of Overriding Considerations related to extending Altamont Winds, Inc.'s Conditional Use Permit PLN2014-00028 (2015; 8);
- Covell Village PEIR, Davis (2005; 19);
- Bureau of Land Management Wind Energy Programmatic EIS Scoping (2003; 7.);
- NEPA Environmental Analysis for Biosafety Level 4 National Biocontainment Laboratory (NBL) at UC Davis (2003: 7);
- Notice of Preparation of UC Merced Community and Area Plan EIR, on behalf of The Wildlife Society—Western Section (2001: 8.);
- Preliminary Draft Yolo County Habitat Conservation Plan (2001; 2 letters totaling 35.);
- Merced County General Plan Revision, notice of Negative Declaration (2001: 2.);
- Notice of Preparation of Campus Parkway EIR/EIS (2001: 7.);
- Draft Recovery Plan for the bighorn sheep in the Peninsular Range (*Ovis candensis*) (2000);
- Draft Recovery Plan for the California Red-legged Frog (*Rana aurora draytonii*), on behalf of The Wildlife Society—Western Section (2000: 10.);
- Sierra Nevada Forest Plan Amendment Draft Environmental Impact Statement, on behalf of The Wildlife Society—Western Section (2000: 7.);
- State Water Project Supplemental Water Purchase Program, Draft Program EIR (1997);
- Davis General Plan Update EIR (2000);
- Turn of the Century EIR (1999: 10);
- Proposed termination of Critical Habitat Designation under the Endangered Species Act (Fed. Reg. 64(113): 31871-31874) (1999);
- NOA Draft Addendum to the Final Handbook for Habitat Conservation Planning and Incidental Take Permitting Process, termed the HCP 5-Point Policy Plan (Fed. Reg. 64(45): 11485 - 11490) (1999; 2 + attachments);
- Covell Center Project EIR and EIR Supplement (1997).

Position Statements I prepared the following position statements for the Western Section of The Wildlife Society, and one for nearly 200 scientists:

- Recommended that the California Department of Fish and Game prioritize the extermination of the introduced southern water snake in northern California. The Wildlife Society--Western Section (2001);
- Recommended that The Wildlife Society—Western Section appoint or recommend members of the independent scientific review panel for the UC Merced environmental review process (2001);
- Opposed the siting of the University of California's 10th campus on a sensitive vernal pool/grassland complex east of Merced. The Wildlife Society--Western Section (2000);
- Opposed the legalization of ferret ownership in California. The Wildlife Society--Western Section (2000);
- Opposed the Proposed "No Surprises," "Safe Harbor," and "Candidate Conservation Agreement" rules, including permit-shield protection provisions (Fed. Reg. Vol. 62, No. 103, pp. 29091-29098 and No. 113, pp. 32189-32194). This statement was signed by 188 scientists and went to the responsible federal agencies, as well as to the U.S. Senate and House of Representatives.

Posters at Professional Meetings

Leyvas, E. and K. S. Smallwood. 2015. Rehabilitating injured animals to offset and rectify wind project impacts. Conference on Wind Energy and Wildlife Impacts, Berlin, Germany, 9-12 March 2015.

Smallwood, K. S., J. Mount, S. Standish, E. Leyvas, D. Bell, E. Walther, B. Karas. 2015. Integrated detection trials to improve the accuracy of fatality rate estimates at wind projects. Conference on Wind Energy and Wildlife Impacts, Berlin, Germany, 9-12 March 2015.

Smallwood, K. S. and C. G. Thelander. 2005. Lessons learned from five years of avian mortality research in the Altamont Pass WRA. AWEA conference, Denver, May 2005.

Neher, L., L. Wilder, J. Woo, L. Spiegel, D. Yen-Nakafugi, and K.S. Smallwood. 2005. Bird's eye view on California wind. AWEA conference, Denver, May 2005.

Smallwood, K. S., C. G. Thelander and L. Spiegel. 2003. Toward a predictive model of avian fatalities in the Altamont Pass Wind Resource Area. Windpower 2003 Conference and Convention, Austin, Texas.

Smallwood, K.S. and Eva Butler. 2002. Pocket Gopher Response to Yellow Star-thistle Eradication as part of Grassland Restoration at Decommissioned Mather Air Force Base, Sacramento County, California. White Mountain Research Station Open House, Barcroft Station.

Smallwood, K.S. and Michael L. Morrison. 2002. Fresno kangaroo rat (*Dipodomys nitratoides*) Conservation Research at Resources Management Area 5, Lemoore Naval Air Station. White Mountain Research Station Open House, Barcroft Station.

Smallwood, K.S. and E.L. Fitzhugh. 1989. Differentiating mountain lion and dog tracks. Third Mountain Lion Workshop, Prescott, AZ.

Smith, T. R. and K. S. Smallwood. 2000. Effects of study area size, location, season, and allometry on reported *Sorex* shrew densities. Annual Meeting of the Western Section of The Wildlife Society.

Presentations at Professional Meetings and Seminars

Dog detections of bat and bird fatalities at wind farms in the Altamont Pass Wind Resource Area. East Bay Regional Park District 2019 Stewardship Seminar, Oakland, California, 13 November 2019.

Repowering the Altamont Pass. Altamont Symposium, The Wildlife Society – Western Section, 5 February 2017.

Developing methods to reduce bird mortality in the Altamont Pass Wind Resource Area, 1999-2007. Altamont Symposium, The Wildlife Society – Western Section, 5 February 2017.

Conservation and recovery of burrowing owls in Santa Clara Valley. Santa Clara Valley Habitat

Agency, Newark, California, 3 February 2017.

Mitigation of Raptor Fatalities in the Altamont Pass Wind Resource Area. Raptor Research Foundation Meeting, Sacramento, California, 6 November 2015.

From burrows to behavior: Research and management for burrowing owls in a diverse landscape. California Burrowing Owl Consortium meeting, 24 October 2015, San Jose, California.

The Challenges of repowering. Keynote presentation at Conference on Wind Energy and Wildlife Impacts, Berlin, Germany, 10 March 2015.

Research Highlights Altamont Pass 2011-2015. Scientific Review Committee, Oakland, California, 8 July 2015.

Siting wind turbines to minimize raptor collisions: Altamont Pass Wind Resource Area. US Fish and Wildlife Service Golden Eagle Working Group, Sacramento, California, 8 January 2015.

Evaluation of nest boxes as a burrowing owl conservation strategy. Sacramento Chapter of the Western Section, The Wildlife Society. Sacramento, California, 26 August 2013.

Predicting collision hazard zones to guide repowering of the Altamont Pass. Conference on wind power and environmental impacts. Stockholm, Sweden, 5-7 February 2013.

Impacts of Wind Turbines on Wildlife. California Council for Wildlife Rehabilitators, Yosemite, California, 12 November 2012.

Impacts of Wind Turbines on Birds and Bats. Madrone Audubon Society, Santa Rosa, California, 20 February 2012.

Comparing Wind Turbine Impacts across North America. California Energy Commission Staff Workshop: Reducing the Impacts of Energy Infrastructure on Wildlife, 20 July 2011.

Siting Repowered Wind Turbines to Minimize Raptor Collisions. California Energy Commission Staff Workshop: Reducing the Impacts of Energy Infrastructure on Wildlife, 20 July 2011.

Siting Repowered Wind Turbines to Minimize Raptor Collisions. Alameda County Scientific Review Committee meeting, 17 February 2011

Comparing Wind Turbine Impacts across North America. Conference on Wind energy and Wildlife impacts, Trondheim, Norway, 3 May 2011.

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Siting Repowered Wind Turbines to Minimize Raptor Collisions. Raptor Symposium, The Wildlife Society - Western Section, Riverside, California, February 2011.

Wildlife mortality caused by wind turbine collisions. Ecological Society of America, Pittsburgh,

Pennsylvania, 6 August 2010.

Map-based repowering and reorganization of a wind farm to minimize burrowing owl fatalities. California burrowing Owl Consortium Meeting, Livermore, California, 6 February 2010.

Environmental barriers to wind power. Getting Real About Renewables: Economic and Environmental Barriers to Biofuels and Wind Energy. A symposium sponsored by the Environmental & Energy Law & Policy Journal, University of Houston Law Center, Houston, 23 February 2007.

Lessons learned about bird collisions with wind turbines in the Altamont Pass and other US wind farms. Meeting with Japan Ministry of the Environment and Japan Ministry of the Economy, Wild Bird Society of Japan, and other NGOs Tokyo, Japan, 9 November 2006.

Lessons learned about bird collisions with wind turbines in the Altamont Pass and other US wind farms. Symposium on bird collisions with wind turbines. Wild Bird Society of Japan, Tokyo, Japan, 4 November 2006.

Responses of Fresno kangaroo rats to habitat improvements in an adaptive management framework. California Society for Ecological Restoration (SERCAL) 13th Annual Conference, UC Santa Barbara, 27 October 2006.

Fatality associations as the basis for predictive models of fatalities in the Altamont Pass Wind Resource Area. EEI/APLIC/PIER Workshop, 2006 Biologist Task Force and Avian Interaction with Electric Facilities Meeting, Pleasanton, California, 28 April 2006.

Burrowing owl burrows and wind turbine collisions in the Altamont Pass Wind Resource Area. The Wildlife Society - Western Section Annual Meeting, Sacramento, California, February 8, 2006.

Mitigation at wind farms. Workshop: Understanding and resolving bird and bat impacts. American Wind Energy Association and Audubon Society. Los Angeles, CA. January 10 and 11, 2006.

Incorporating data from the California Wildlife Habitat Relationships (CWHR) system into an impact assessment tool for birds near wind farms. Shawn Smallwood, Kevin Hunting, Marcus Yee, Linda Spiegel, Monica Parisi. Workshop: Understanding and resolving bird and bat impacts. American Wind Energy Association and Audubon Society. Los Angeles, CA. January 10 and 11, 2006.

Toward indicating threats to birds by California's new wind farms. California Energy Commission, Sacramento, May 26, 2005.

Avian collisions in the Altamont Pass. California Energy Commission, Sacramento, May 26, 2005.

Ecological solutions for avian collisions with wind turbines in the Altamont Pass Wind Resource Area. EPRI Environmental Sector Council, Monterey, California, February 17, 2005.

Ecological solutions for avian collisions with wind turbines in the Altamont Pass Wind Resource Area. The Wildlife Society—Western Section Annual Meeting, Sacramento, California, January 19,

2005.

Associations between avian fatalities and attributes of electric distribution poles in California. The Wildlife Society - Western Section Annual Meeting, Sacramento, California, January 19, 2005.

Minimizing avian mortality in the Altamont Pass Wind Resources Area. UC Davis Wind Energy Collaborative Forum, Palm Springs, California, December 14, 2004.

Selecting electric distribution poles for priority retrofitting to reduce raptor mortality. Raptor Research Foundation Meeting, Bakersfield, California, November 10, 2004.

Responses of Fresno kangaroo rats to habitat improvements in an adaptive management framework. Annual Meeting of the Society for Ecological Restoration, South Lake Tahoe, California, October 16, 2004.

Lessons learned from five years of avian mortality research at the Altamont Pass Wind Resources Area in California. The Wildlife Society Annual Meeting, Calgary, Canada, September 2004.

The ecology and impacts of power generation at Altamont Pass. Sacramento Petroleum Association, Sacramento, California, August 18, 2004.

Burrowing owl mortality in the Altamont Pass Wind Resource Area. California Burrowing Owl Consortium meeting, Hayward, California, February 7, 2004.

Burrowing owl mortality in the Altamont Pass Wind Resource Area. California Burrowing Owl Symposium, Sacramento, November 2, 2003.

Raptor Mortality at the Altamont Pass Wind Resource Area. National Wind Coordinating Committee, Washington, D.C., November 17, 2003.

Raptor Behavior at the Altamont Pass Wind Resource Area. Annual Meeting of the Raptor Research Foundation, Anchorage, Alaska, September, 2003.

Raptor Mortality at the Altamont Pass Wind Resource Area. Annual Meeting of the Raptor Research Foundation, Anchorage, Alaska, September, 2003.

California mountain lions. Ecological & Environmental Issues Seminar, Department of Biology, California State University, Sacramento, November, 2000.

Intra- and inter-turbine string comparison of fatalities to animal burrow densities at Altamont Pass. National Wind Coordinating Committee, Carmel, California, May, 2000.

Using a Geographic Positioning System (GPS) to map wildlife and habitat. Annual Meeting of the Western Section of The Wildlife Society, Riverside, CA, January, 2000.

Suggested standards for science applied to conservation issues. Annual Meeting of the Western Section of The Wildlife Society, Riverside, CA, January, 2000.

The indicators framework applied to ecological restoration in Yolo County, California. Society for Ecological Restoration, September 25, 1999.

Ecological restoration in the context of animal social units and their habitat areas. Society for Ecological Restoration, September 24, 1999.

Relating Indicators of Ecological Health and Integrity to Assess Risks to Sustainable Agriculture and Native Biota. International Conference on Ecosystem Health, August 16, 1999.

A crosswalk from the Endangered Species Act to the HCP Handbook and real HCPs. Southern California Edison, Co. and California Energy Commission, March 4-5, 1999.

Mountain lion track counts in California: Implications for Management. Ecological & Environmental Issues Seminar, Department of Biological Sciences, California State University, Sacramento, November 4, 1998.

"No Surprises" -- Lack of science in the HCP process. California Native Plant Society Annual Conservation Conference, The Presidio, San Francisco, September 7, 1997.

In Your Interest. A half hour weekly show aired on Channel 10 Television, Sacramento. In this episode, I served on a panel of experts discussing problems with the implementation of the Endangered Species Act. Aired August 31, 1997.

Spatial scaling of pocket gopher (*Geomyidae*) density. Southwestern Association of Naturalists 44th Meeting, Fayetteville, Arkansas, April 10, 1997.

Estimating prairie dog and pocket gopher burrow volume. Southwestern Association of Naturalists 44th Meeting, Fayetteville, Arkansas, April 10, 1997.

Ten years of mountain lion track survey. Fifth Mountain Lion Workshop, San Diego, February 27, 1996.

Study and interpretive design effects on mountain lion density estimates. Fifth Mountain Lion Workshop, San Diego, February 27, 1996.

Small animal control. Session moderator and speaker at the California Farm Conference, Sacramento, California, Feb. 28, 1995.

Small animal control. Ecological Farming Conference, Asylomar, California, Jan. 28, 1995.

Habitat associations of the Swainson's Hawk in the Sacramento Valley's agricultural landscape. 1994 Raptor Research Foundation Meeting, Flagstaff, Arizona.

Alfalfa as wildlife habitat. Seed Industry Conference, Woodland, California, May 4, 1994.

Habitats and vertebrate pests: impacts and management. Managing Farmland to Bring Back Game Birds and Wildlife to the Central Valley. Yolo County Resource Conservation District, U.C. Davis, February 19, 1994.

Management of gophers and alfalfa as wildlife habitat. Orland Alfalfa Production Meeting and Sacramento Valley Alfalfa Production Meeting, February 1 and 2, 1994.

Patterns of wildlife movement in a farming landscape. Wildlife and Fisheries Biology Seminar Series: Recent Advances in Wildlife, Fish, and Conservation Biology, U.C. Davis, Dec. 6, 1993.

Alfalfa as wildlife habitat. California Alfalfa Symposium, Fresno, California, Dec. 9, 1993.

Management of pocket gophers in Sacramento Valley alfalfa. California Alfalfa Symposium, Fresno, California, Dec. 8, 1993.

Association analysis of raptors in a farming landscape. Plenary speaker at Raptor Research Foundation Meeting, Charlotte, North Carolina, Nov. 6, 1993.

Landscape strategies for biological control and IPM. Plenary speaker, International Conference on Integrated Resource Management and Sustainable Agriculture, Beijing, China, Sept. 11, 1993.

Landscape Ecology Study of Pocket Gophers in Alfalfa. Alfalfa Field Day, U.C. Davis, July 1993.

Patterns of wildlife movement in a farming landscape. Spatial Data Analysis Colloquium, U.C. Davis, August 6, 1993.

Sound stewardship of wildlife. Veterinary Medicine Seminar: Ethics of Animal Use, U.C. Davis. May 1993.

Landscape ecology study of pocket gophers in alfalfa. Five County Grower's Meeting, Tracy, California. February 1993.

Turbulence and the community organizers: The role of invading species in ordering a turbulent system, and the factors for invasion success. Ecology Graduate Student Association Colloquium, U.C. Davis. May 1990.

Evaluation of exotic vertebrate pests. Fourteenth Vertebrate Pest Conference, Sacramento, California. March 1990.

Analytical methods for predicting success of mammal introductions to North America. The Western Section of the Wildlife Society, Hilo, Hawaii. February 1988.

A state-wide mountain lion track survey. Sacramento County Dept Parks and Recreation. April 1986.

The mountain lion in California. Davis Chapter of the Audubon Society. October 1985.

Ecology Graduate Student Seminars, U.C. Davis, 1985-1990: Social behavior of the mountain lion; Mountain lion control; Political status of the mountain lion in California.

Other forms of Participation at Professional Meetings

- Scientific Committee, Conference on Wind energy and Wildlife impacts, Berlin, Germany, March 2015.

- Scientific Committee, Conference on Wind energy and Wildlife impacts, Stockholm, Sweden, February 2013.

- Workshop co-presenter at Birds & Wind Energy Specialist Group (BAWESG) Information sharing week, Bird specialist studies for proposed wind energy facilities in South Africa, Endangered Wildlife Trust, Darling, South Africa, 3-7 October 2011.

- Scientific Committee, Conference on Wind energy and Wildlife impacts, Trondheim, Norway, 2-5 May 2011.

- Chair of Animal Damage Management Session, The Wildlife Society, Annual Meeting, Reno, Nevada, September 26, 2001.

- Chair of Technical Session: Human communities and ecosystem health: Comparing perspectives and making connection. Managing for Ecosystem Health, International Congress on Ecosystem Health, Sacramento, CA August 15-20, 1999.

- Student Awards Committee, Annual Meeting of the Western Section of The Wildlife Society, Riverside, CA, January, 2000.

- Student Mentor, Annual Meeting of the Western Section of The Wildlife Society, Riverside, CA, January, 2000.

Printed Mass Media

Smallwood, K.S., D. Mooney, and M. McGuinness. 2003. We must stop the UCD biolab now. Op-Ed to the Davis Enterprise.

Smallwood, K.S. 2002. Spring Lake threatens Davis. Op-Ed to the Davis Enterprise.

Smallwood, K.S. Summer, 2001. Mitigation of habitation. The Flatlander, Davis, California.

Entrikan, R.K. and K.S. Smallwood. 2000. Measure O: Flawed law would lock in new taxes. Op-Ed to the Davis Enterprise.

Smallwood, K.S. 2000. Davis delegation lobbies Congress for Wildlife conservation. Op-Ed to the Davis Enterprise.

Smallwood, K.S. 1998. Davis Visions. The Flatlander, Davis, California.

Smallwood, K.S. 1997. Last grab for Yolo's land and water. The Flatlander, Davis, California.

Smallwood, K.S. 1997. The Yolo County HCP. Op-Ed to the Davis Enterprise.

Radio/Television

PBS News Hour,

FOX News, Energy in America: Dead Birds Unintended Consequence of Wind Power Development, August 2011.

KXJZ Capital Public Radio -- Insight (Host Jeffrey Callison). Mountain lion attacks (with guest Professor Richard Coss). 23 April 2009;

KXJZ Capital Public Radio -- Insight (Host Jeffrey Callison). Wind farm Rio Vista Renewable Power. 4 September 2008;

KQED QUEST Episode #111. Bird collisions with wind turbines. 2007;

KDVS Speaking in Tongues (host Ron Glick), Yolo County HCP: 1 hour. December 27, 2001;

KDVS Speaking in Tongues (host Ron Glick), Yolo County HCP: 1 hour. May 3, 2001;

KDVS Speaking in Tongues (host Ron Glick), Yolo County HCP: 1 hour. February 8, 2001;

KDVS Speaking in Tongues (host Ron Glick & Shawn Smallwood), California Energy Crisis: 1 hour. Jan. 25, 2001;

KDVS Speaking in Tongues (host Ron Glick), Headwaters Forest HCP: 1 hour. 1998;

Davis Cable Channel (host Gerald Heffernon), Burrowing owls in Davis: half hour. June, 2000;

Davis Cable Channel (hosted by Davis League of Women Voters), Measure O debate: 1 hour. October, 2000;

KXTV 10, In Your Interest, The Endangered Species Act: half hour. 1997.

Reviews of Journal Papers (Scientific journals for whom I've provided peer review)

Journal	**Journal**
American Naturalist	Journal of Animal Ecology
Journal of Wildlife Management	Western North American Naturalist
Auk	Journal of Raptor Research
Biological Conservation	National Renewable Energy Lab reports
Canadian Journal of Zoology	Oikos
Ecosystem Health	The Prairie Naturalist
Environmental Conservation	Restoration Ecology
Environmental Management	Southwestern Naturalist
Functional Ecology	The Wildlife Society--Western Section Trans.

Journal	Journal
Journal of Zoology (London)	Proc. Int. Congress on Managing for Ecosystem Health
Journal of Applied Ecology	Transactions in GIS
Ecology	Tropical Ecology
Wildlife Society Bulletin	Peer J
Biological Control	The Condor

Committees

- Scientific Review Committee, Alameda County, Altamont Pass Wind Resource Area
- Ph.D. Thesis Committee, Steve Anderson, University of California, Davis
- MS Thesis Committee, Marcus Yee, California State University, Sacramento

Other Professional Activities or Products

Testified in Federal Court in Denver during 2005 over the fate of radio-nuclides in the soil at Rocky Flats Plant after exposure to burrowing animals. My clients won a judgment of $553,000,000. I have also testified in many other cases of litigation under CEQA, NEPA, the Warren-Alquist Act, and other environmental laws. My clients won most of the cases for which I testified.

Testified before Environmental Review Tribunals in Ontario, Canada regarding proposed White Pines, Amherst Island, and Fairview Wind Energy projects.

Testified in Skamania County Hearing in 2009 on the potential impacts of zoning the County for development of wind farms and hazardous waste facilities.

Testified in deposition in 2007 in the case of O'Dell et al. vs. FPL Energy in Houston, Texas.

Testified in Klickitat County Hearing in 2006 on the potential impacts of the Windy Point Wind Farm.

Memberships in Professional Societies

The Wildlife Society
Raptor Research Foundation

Honors and Awards

Fulbright Research Fellowship to Indonesia, 1987
J.G. Boswell Full Academic Scholarship, 1981 college of choice
Certificate of Appreciation, The Wildlife Society—Western Section, 2000, 2001
Northern California Athletic Association Most Valuable Cross Country Runner, 1984
American Legion Award, Corcoran High School, 1981, and John Muir Junior High, 1977
CIF Section Champion, Cross Country in 1978
CIF Section Champion, Track & Field 2 mile run in 1981
National Junior Record, 20 kilometer run, 1982
National Age Group Record, 1500 meter run, 1978

Community Activities

District 64 Little League Umpire, 2003-2007
Dixon Little League Umpire, 2006-07
Davis Little League Chief Umpire and Board member, 2004-2005
Davis Little League Safety Officer, 2004-2005
Davis Little League Certified Umpire, 2002-2004
Davis Little League Scorekeeper, 2002
Davis Visioning Group member
Petitioner for Writ of Mandate under the California Environmental Quality Act against City of Woodland decision to approve the Spring Lake Specific Plan, 2002
Served on campaign committees for City Council candidates

Representative Clients/Funders

Law Offices of Stephan C. Volker
Blum Collins, LLP
Eric K. Gillespie Professional Corporation
Law Offices of Berger & Montague
Lozeau | Drury LLP
Law Offices of Roy Haber
Law Offices of Edward MacDonald
Law Office of John Gabrielli
Law Office of Bill Kopper
Law Office of Donald B. Mooney
Law Office of Veneruso & Moncharsh
Law Office of Steven Thompson
Law Office of Brian Gaffney
California Wildlife Federation
Defenders of Wildlife
Sierra Club
National Endangered Species Network
Spirit of the Sage Council
The Humane Society
Hagens Berman LLP
Environmental Protection Information Center
Goldberg, Kamin & Garvin, Attorneys at Law
Californians for Renewable Energy (CARE)
Seatuck Environmental Association
Friends of the Columbia Gorge, Inc.
Save Our Scenic Area
Alliance to Protect Nantucket Sound
Friends of the Swainson's Hawk
Alameda Creek Alliance
Center for Biological Diversity
California Native Plant Society
Endangered Wildlife Trust
and BirdLife South Africa
AquAlliance
Oregon Natural Desert Association
Save Our Sound
G3 Energy and Pattern Energy
Emerald Farms
Pacific Gas & Electric Co.
Southern California Edison Co.
Georgia-Pacific Timber Co.
Northern Territories Inc.
David Magney Environmental Consulting
Wildlife History Foundation
NextEra Energy Resources, LLC
Ogin, Inc.
EDF Renewables
National Renewable Energy Lab
Altamont Winds LLC
Salka Energy
Comstocks Business (magazine)
BioResource Consultants
Tierra Data
Black and Veatch
Terry Preston, Wildlife Ecology Research Center
EcoStat, Inc.
US Navy
US Department of Agriculture
US Forest Service
US Fish & Wildlife Service
US Department of Justice
California Energy Commission
California Office of the Attorney General
California Department of Fish & Wildlife
California Department of Transportation
California Department of Forestry
California Department of Food & Agriculture
Ventura County Counsel
County of Yolo
Tahoe Regional Planning Agency
Sustainable Agriculture Research & Education Program
Sacramento-Yolo Mosquito and Vector Control District
East Bay Regional Park District
County of Alameda
Don & LaNelle Silverstien
Seventh Day Adventist Church
Escuela de la Raza Unida
Susan Pelican and Howard Beeman
Residents Against Inconsistent Development, Inc.
Bob Sarvey
Mike Boyd
Hillcroft Neighborhood Fund
Joint Labor Management Committee, Retail Food Industry
Lisa Rocca
Kevin Jackson
Dawn Stover and Jay Letto
Nancy Havassy
Catherine Portman (for Brenda Cedarblade)
Ventus Environmental Solutions, Inc.
Panorama Environmental, Inc.
Adams Broadwell Professional Corporation

Representative special-status species experience

Common name	Species name	Description
Field experience		
California red-legged frog	*Rana aurora draytonii*	Protocol searches; Many detections
Foothill yellow-legged frog	*Rana boylii*	Presence surveys; Many detections
Western spadefoot	*Spea hammondii*	Presence surveys; Few detections
California tiger salamander	*Ambystoma californiense*	Protocol searches; Many detections
Coast range newt	*Taricha torosa torosa*	Searches and multiple detections
Blunt-nosed leopard lizard	*Gambelia sila*	Detected in San Luis Obispo County
California horned lizard	*Phrynosoma coronatum frontale*	Searches; Many detections
Western pond turtle	*Clemmys marmorata*	Searches; Many detections
San Joaquin kit fox	*Vulpes macrotis mutica*	Protocol searches; detections
Sumatran tiger	*Panthera tigris*	Track surveys in Sumatra
Mountain lion	*Puma concolor californicus*	Research and publications
Point Arena mountain beaver	*Aplodontia rufa nigra*	Remote camera operation
Giant kangaroo rat	*Dipodomys ingens*	Detected in Cholame Valley
San Joaquin kangaroo rat	*Dipodomys nitratoides*	Monitoring & habitat restoration
Monterey dusky-footed woodrat	*Neotoma fuscipes luciana*	Non-target captures and mapping of dens
Salt marsh harvest mouse	*Reithrodontomys raviventris*	Habitat assessment, monitoring
Salinas harvest mouse	*Reithrodontomys megalotus distichlus*	Captures; habitat assessment
Bats		Thermal imaging surveys
California clapper rail	*Rallus longirostris*	Surveys and detections
Golden eagle	*Aquila chrysaetos*	Numerical & behavioral surveys
Swainson's hawk	*Buteo swainsoni*	Numerical & behavioral surveys
Northern harrier	*Circus cyaeneus*	Numerical & behavioral surveys
White-tailed kite	*Elanus leucurus*	Numerical & behavioral surveys
Loggerhead shrike	*Lanius ludovicianus*	Large area surveys
Least Bell's vireo	*Vireo bellii pusillus*	Detected in Monterey County
Willow flycatcher	*Empidonax traillii extimus*	Research at Sierra Nevada breeding sites
Burrowing owl	*Athene cunicularia hypugia*	Numerical & behavioral surveys
Valley elderberry longhorn beetle	*Desmocerus californicus dimorphus*	Monitored success of relocation and habitat restoration
Analytical		
Arroyo southwestern toad	*Bufo microscaphus californicus*	Research and report.
Giant garter snake	*Thamnophis gigas*	Research and publication
Northern goshawk	*Accipiter gentilis*	Research and publication
Northern spotted owl	*Strix occidentalis*	Research and reports
Alameda whipsnake	*Masticophis lateralis euryxanthus*	Expert testimony

EXHIBIT 13

Terrell Watt Planning Consultants
1937 Filbert Street
San Francisco, CA 94123
terrywatt@att.net
415-377-6280

January 19, 2021

Richard Drury
Lozeau Drury, LLP
410 12th Street, Suite 250
Oakland, CA 94607

RE: Comments on Final Environmental Impact Report for Proposed UCSF Comprehensive Parnassus Heights Plan

Dear Mr. Drury,

At your request, I have reviewed the Final Environmental Impact Report ("FEIR") for the proposed UCSF Comprehensive Parnassus Heights Plan ("Project") as well as the terms of a recent Agreement entered into by UCSF and the City of San Francisco. This comment letter includes comments by Jared Ikeda, who submitted comments on the DEIR and who has also reviewed the FEIR. Our review focused on the new Agreement as well as the adequacy of the FEIR's Master and comment letter-specific responses directed at our comments on the Draft EIR.

After carefully reviewing the FEIR for the Project we have concluded the FEIR fails in numerous respects to comply with CEQA and to fulfill CEQA's fundamental mandate. As described below, the FEIR violates this law because it fundamentally fails to adequately respond to our comments. The purpose of each response to a comment on the Draft EIR is to address the significant environmental issue(s) raised by each comment. Specifically, Section 15088(b) of the CEQA Guidelines requires that the written response describe the nature of the significant environmental issues raised. When the lead agency's position conflicts with recommendations and objections raised in the comments, the environmental issues must be addressed in detail giving reason why specific comments and suggestions were not accepted. Here, the Final EIR summarily dismisses many comments without addressing their merits.

In addition to the Final EIR's failure to adequately address numerous comments on the Draft EIR, a recent agreement between UCSF and the City of San Francisco fundamentally changes the Project Description. Specifically, the agreement commits UCSF to build 1,263 additional new units for faculty, students and staff, for a Project total of 2,025 new housing units. While

increasing the number of housing units in the Project may have beneficial implications, the fact is the numerous, potentially significant impacts associated with more than doubling the housing in the Project have not been analyzed. Potentially significant impacts caused by this substantial increase in housing units include, but are not limited to impacts to public services and facilities, impacts to parking, traffic and transit, aesthetic impacts and other impacts associated with a significant increase in population in the neighborhood. Moreover, as described below, the addition of these units to the Project destabilizes the Project as described in both the DEIR and FEIR, requiring recirculation of a Draft EIR that adequately analyzes the impacts associated with the changed Project.

I. The Final EIR Fails to Adequately Respond to Comments

As stated above, the fundamental purpose of each response to a comment on the Draft EIR is to address the significant environmental issue(s) raised by each comment. Specifically, Section 15088(b) of the CEQA Guidelines requires that the written response describe the nature of the significant environmental issues raised. When the lead agency's position conflicts with recommendations and objections raised in the comments, the environmental issues must be addressed in detail giving reason why specific comments and suggestions were not accepted. Here, the Final EIR summarily dismisses many comments without addressing their merits.

There is no better example of the FEIR's failure to adequately respond to comments than the Final EIR's response to comments on the Project's aesthetic impacts. Responses to comments documenting significant impacts associated with the Project contend that placing a 294 foot tower in a residential neighborhood has no aesthetic impacts whatsoever. Comments are disregarded based on UC's argument that it need not comply with local planning, zoning and other regulations. This massive non-conformity – a nearly 300 foot tower – clearly causes a significant impact as documented in comments submitted by Jared Ikeda, me and many other commentors.

Comments concerning the significance of visual impacts are further dismissed based on the following responses:

- Visual simulations submitted in comments by Jared Ikeda are not the same as a ground-level observer would see.

- Simulations misrepresent the effect of the proposed new hospital. The new hospital would certainly be visible from these locations, but it would take up a small portion of the horizon and only from Tank Hill would the new building obscure any ocean view at all from publicly accessible viewpoints.

- The trailhead at Farnsworth would be partially obscured by vegetation and narrow field of view and is not a high quality viewpoint and visual change is not considered significant.

- UCSF is constitutionally exempt from local land use regulations and therefore not required to undergo review by City of San Francisco Planning Dept Urban Design Advisory Team or conform to policies, principles and other provisions concerning land use and aesthetics.

None of these responses address the pure fact that the Project's nearly 300 foot tower will result in significant visual impacts. Specifically, the preparation of visual simulations using Google Earth was intended to provide context to the visual impacts from the proposed building height and mass of the new hospital. The proposed new hospital at 16 stories and 294 feet in height is clearly shown by the before and after figures to radically alter the scenic quality from different nearby viewpoints. Simulations submitted by Jared Ikeda in comments on the DEIR illustrate that the proposed building mass changes the view scenery significantly. While not ground-level simulations, the simulations illustrate the expected change in scenery and provide the visual context from these locations. The fact that the views will be changed is irrefutable and cannot be denied or put aside as insignificant. In certain locations within the neighborhood as illustrated by the simulations submitted in comments on the DEIR, the view is blocked by the new structure in some cases and radically altered in others. The different simulations that were provided in comments demonstrate these conditions. The notion that vegetation and other features may partially obscure the view of the new hospital does not change the fact that there will be a change to the view and scenic qualities at the Farnworth Trail as well as other publicly accessible viewpoints and the neighborhood.

The argument that the proposed plan is constitutionally exempt from local land use regulations does nothing to the address the fact that the Project significantly impacts the view from publicly accessible viewpoints and the general neighborhood. It is a specious argument to say that because University is not required to undergo a review with the City's Urban Design Advisory Team or comply with the City's rules, that there are no significant impacts associated with this massive tower. The Final EIR simply fails to adequately respond.

The Final EIR states that the new hospital would be visible from various publicly accessible viewpoints but concludes that these scenic vistas would not be substantially or adversely impacted. Clearly the massive new hospital structure will significantly alter views and is out of scale with the neighborhood, but because the Final EIR does not agree, feasible mitigation measures and alternative capable of reducing or eliminating these impacts are also disregarded (e.g., reducing the height of the new hospital, off-site options for the new hospital component of the Project).

Moreover, compliance with the City of San Francisco's adopted policies and regulations remains a key indicator of whether the Project is or is not compatible with the surrounding neighborhood. UCSF clearly understood the breaking point for compatibility in its 1976 Regents' Resolution. Recognizing the unique and constrained location the Parnassus Heights

campus occupies, the Regents adopted a sensible "space ceiling" for the campus in its 1976 Regents Resolution, stating in pertinent part:

- "The total structures within the campus boundaries shall not exceed 3.55 million gross square feet (not including space committed to residential use on Third, Fourth, Fifth and Parnassus Avenues and Kirkham and Irving Streets) and this limit shall be permanent."

In addition, the Resolution recognizes the transportation problems in the area and commits funds to develop a plan to alleviate transportation problems including traffic, parking congestion and lack of transit. The Final EIR cannot dismiss significant impacts based on UCSF's disregard for City policy and regulations. The additional housing units will further strain this constrained neighborhood by increasing population and in turn putting additional demands on the transportation system and other support systems. The demands from additional housing can feasibly be offset by a reduced or relocated hospital so that the overall Project stays within the constraints and limitations of this unique neighborhood.

II. The DEIR Should be Revised and Recirculated to Address UCSF's Commitment to Build 1,263 New Housing Units

A fundamental requirement of CEQA is that an EIR contain an accurate, complete and stable project description. Without a complete and stable project description, an agency and the public cannot be assured that all the project's environmental impacts have been revealed and mitigated. Further, CEQA and the CEQA Guidelines mandate that an EIR include a description of the "physical environmental conditions . . . from both a local and a regional perspective. . . Knowledge of the regional setting is critical to the assessment of environmental impacts." CEQA Guidelines Section 15125(a) and (c). This requirement derives from the principle that without an adequate description of the project's local and regional context, the EIR – and thus the decision-makers, agencies and public who rely on the EIR – cannot accurately assess the potentially significant impacts of the proposed Project.

Although the Final EIR responses summarily and improperly dismissed the argument that the Project Description is in flux due to COVID-19, there is no mistaking the significant change to the Project the addition of 1,263 new housing units for students, faculty and staff means. More than doubling housing constitutes a huge change in the Project as well as its overall impacts. As a result of this Agreement between UCSF and San Francisco, a revised and recirculated DEIR is required to address among other likely significant impacts, impacts to public services and facilities (including schools), traffic, parking and transit, as well as aesthetic and other impacts associated with such a massive increase in the scale of the project. This change in the Project also changes the analysis in the Draft and Final EIR's of the projects growth inducing effects since the new housing fundamentally changes the prior analysis. For example, 1,263 new units will have a multiplier effect in terms of public services and facilities needed in the neighborhood, including but not limited to parks and open space, schools and essential

services. This and other impacts must be analyzed in an environmental document, preferably a revised DEIR, that is circulated for public review and comment. A revised DEIR presents the opportunity to include an adequate growth inducing analysis and analysis of population and housing, missing from the DEIR and dismissed in the FEIR as too speculative. For a Project that will guide development of the campus for 30+years and likely be the basis of streamlined permitting for project facilities and infrastructure, it is especially important that the DEIR comprehensively identify and analyze its impacts on growth, population, housing and employment.

III. The FEIR Improperly Dismisses Feasible Alternatives

Alternatives are optional ways that the Project could achieve most of the objectives while also reducing or eliminating the environmental impacts of the Project. (California Public Resources Code Section 21002). The Final EIR improperly dismisses numerous alternatives as infeasible based on objectives alone, including off-site alternatives -- such as building the hospital at the Hunter's Point Candlestick Park site -- that reduce significant impacts associated with the Project.

The fundamental mandate is that "public agencies should not approve projects if there are feasible alternatives or feasible mitigation measures available which would substantially lessen the significant environmental effects of the project" (PRC Section 21002, 21081). Government agencies are required to consider alternatives to proposed actions affecting the environment. (PRC Section 21001 (g)). Alternatives need not meet all of the objectives and their fundamental purpose is to reduce or eliminate Project impacts.

Alternatives may not be rejected merely because they fail to meet some of the project objectives, are beyond an agency's authority, would require new legislation or would be too expensive. An alternative may be eliminated from further review where it fails to meet most of the basic project objectives; is infeasible; does not avoid significant environmental impacts; and implementation cannot be reasonably ascertained or is remote and speculative. (CEQA Guidelines Section 15126.6 (f)).

Feasible alternatives to the Project, improperly dismissed by the Final EIR, that would reduce or eliminate significant Project impacts should be reinstated for consideration including the following:

- No New Hospital at Parnassus Heights Campus Site and instead one of the following:
    - Implement Phase 2 of Medical Center at Mission Bay Campus Site.
    - New Hospital at Mount Zion Campus Site.
    - Seton Hall Hospital Facility, which stands empty.

- New Hospital at Hunters Point at the Candlestick site formerly slated for a new shopping mall. Locating the new hospital here would avoid many of the impacts associated with the Parnassus site, and would have may co-benefits such as providing jobs in and health services to an underserved and disadvantaged community.

The reasons provided in the Final EIR for dismissing these alternatives largely come down to whether or not the alternative met narrowly drafted Project objectives. The opportunity to revise and recirculate the DEIR to include 1,263 units of additional new housing, also provides an opportunity to address the shortcomings in the alternatives analysis. The DEIR Must be Revised and Recirculated.

Decision makers and the public cannot possibly assess the Project's impacts through the present DEIR and FEIR, both riddled with omissions, errors and inconsistencies. Among other fundamental deficiencies, both DEIR and FEIR repeatedly understate the Project's significant environmental impacts and therefore fail to formulate feasible mitigation to reduce these impacts. To resolve these issues, a revised DEIR that would necessarily include substantial new information must be prepared and recirculated.

Sincerely,

Terry Watt

Terry Watt, ACIP

EXHIBIT 14

Patrick M. Soluri (SBN 210036)
Osha R. Meserve (SBN 204240)
James C. Crowder (SBN 327653)
SOLURI MESERVE, A LAW CORPORATION
510 8th Street
Sacramento, California 95814
Telephone: (916) 455-7300
Facsimile: (916) 244-7300
Emails: patrick@semlawyers.com;
osha@semlawyers.com; james@semlawyers.com

Attorneys for Plaintiffs and Petitioners Parnassus Neighborhood Coalition and Calvin Welch

IN THE SUPERIOR COURT OF THE STATE OF CALIFORNIA

IN AND FOR THE COUNTY OF ALAMEDA

PARNASSUS NEIGHBORHOOD COALITION; and CALVIN WELCH, Plaintiffs/Petitioners, v. THE BOARD OF REGENTS OF THE UNIVERSITY OF CALIFORNIA; and DOES 1 through 10, inclusive, Defendants/Respondents.	CASE NO. RG21088939 Related Cases: Case No. RG21089332 and Case No. RG21090517 Assigned for all Purposes to: Judge Frank Roesch, Department 17 **PETITIONERS' REVISED OPENING BRIEF ON THE MERITS** Trial Date: January 14, 2022 Time: 2:00 p.m. Dept.: 17 Complaint Filed: February 19, 2021

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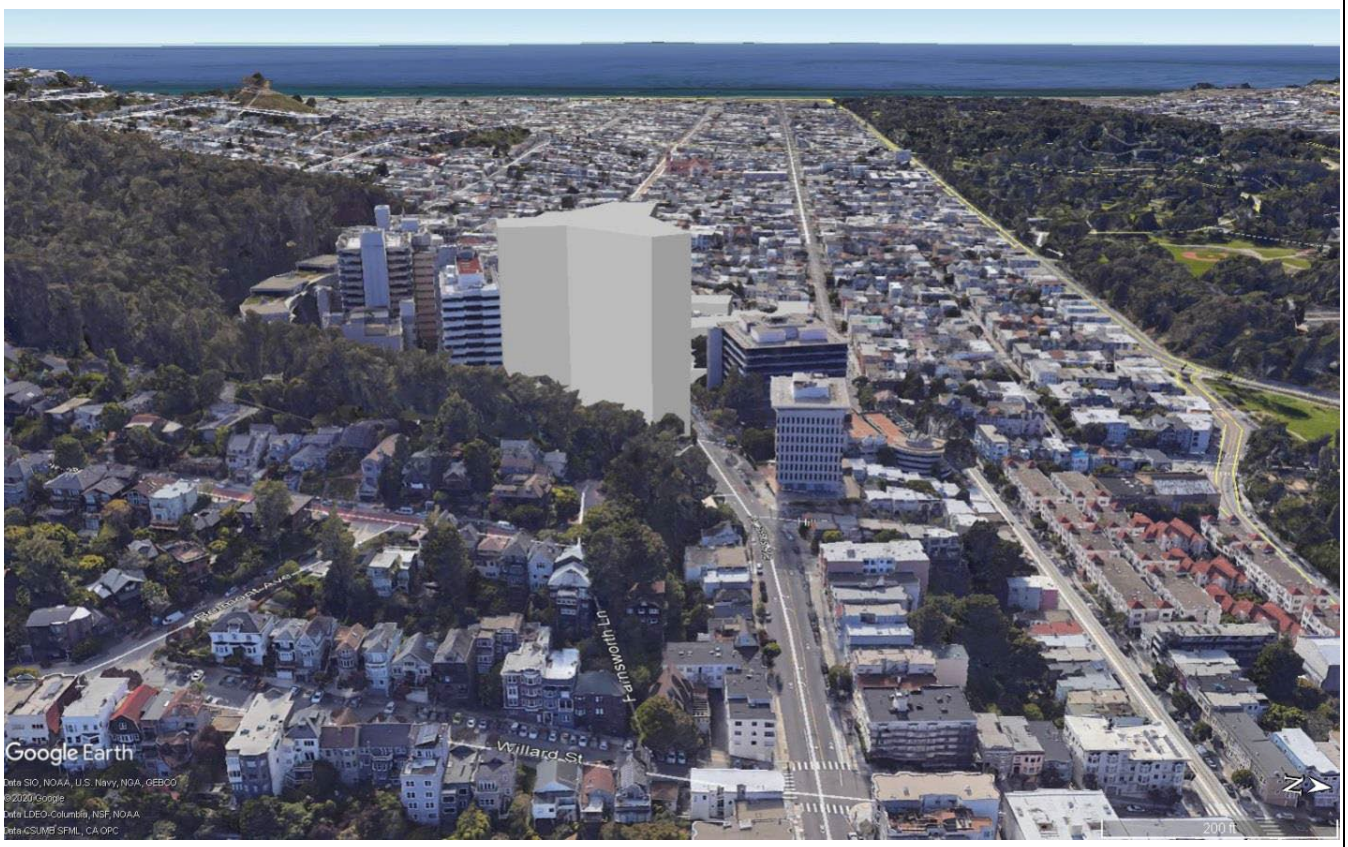

Sixteen-story, 995,000 Square-Foot New Hospital Proposed in Parnassus Heights

(Administrative Record (AR) 3667, 5914.)

Introduction

UCSF's Parnassus Heights campus lies in a beautiful but constrained location within a residential community on the slopes of Mount Sutro. This action challenges the Comprehensive Parnassus Heights Plan ("CPHP" or "Project") approved by the respondent University of California. The CPHP is wildly out of scale in Parnassus Heights. It envisions about six million square feet of construction, including a hospital of almost a million square feet. Decades ago, UC committed not to expand the campus in such impactful manner. Instead, it repeatedly leveraged its space cap promise to justify locating medical facilities that it now it operates successfully in other parts of the City — including at Mission Bay.

The CPHP EIR fails to analyze or mitigate many significant Project impacts and refused to study alternate sites for a new hospital at any other of UC's City properties. Petitioners thus seek enforcement of mandates of the California Environmental Quality Act via this Court's judgment and writ.[1]

Statement of Facts

UCSF's Parnassus Heights Campus in San Francisco includes 107 acres in the Inner Sunset. The sixty-acre Mount Sutro Open Space Reserve lies within the central and southern portion of the campus.

In response to neighborhood concerns, in 1976 UCSF permanently committed to limit buildings on the Parnassus campus to 3.55 million gross square feet (the "space ceiling"). (AR 43029-31; 43046-47.) UC reaffirmed this commitment in 2014 in the UCSF Long Range Development Plan ("2014 LRDP"). (AR 13483.) UC's space ceiling resolution designated the Mount Sutro Open Space Reserve as permanent open space and altered campus boundaries to permanently exclude certain properties and prohibit further expansion within a defined surrounding area. (AR 43029-31; 43046-47.)

The 2014 LRDP established strategies to reduce a space ceiling "overage" that existed at that time by "1) converting some existing office space (UC Hall and Millberry Union towers) to residential use; 2) demolishing a number of buildings and either moving occupants and programs to other campus sites or absorbing them into other buildings at Parnassus Heights; and 3) excluding all residential space from the space ceiling calculation." (AR 13523.) The 2014 LRDP also limited new construction "to the need to comply with state seismic legislation and to better meet campus housing goals" (AR 13519) and to build a "New Hospital Addition." (AR 13523.)

The CPHP would gut and exceed the 3.55 million gross square foot permanent space ceiling by 1.44 million gross square feet. Housing was excluded from the calculation, and so the resulting development would be approximately six million gross square feet, exceeding the promised space

[1] CEQA is codified at Public Resources Code sections 21000, *et seq*. All statutory citations *post* are to the Public Resources Code unless otherwise noted.

ceiling by nearly 100%. (AR 3684.) The CPHP proposes several projects to be completed by 2030, the largest being a sixteen-story, 294 foot-tall New Hospital and a new research and academic building. Other phases would be constructed through 2050. The CPHP calls for 2.9 million gross square feet of new buildings at the campus and amends the 2014 LRDP. (AR 3684 [Table3-2].)

The 2014 LRDP required retaining, and in some cases re-purposing, several historic campus buildings, including UC Hall and Milberry Union. (AR 13523.) The CPHP reverses course. It proposes to demolish buildings that are historically significant and eligible for or already listed in the California Register of Historical Resources. Their loss would cause significant environmental impact. These buildings include UC Hall, Millberry Union, School of Dentistry, Langley Porter Psychiatric Institute, Aldea San Miguel Housing Buildings 8, 10, and 12, and Saunders Court. (AR 238-43; 1738-49; 1755-56; 3890-3906; 3912-13; 6621-22.)

Standard of Review

"The foremost principle under CEQA is that the Legislature intended the act 'to be interpreted in such manner as to afford the fullest possible protection to the environment within the reasonable scope of the statutory language.'" (*Sierra Club v. County of Fresno* (2018) 6 Cal.5th 502, 511 [Citations] (*County of Fresno*).) An EIR must reflect a good faith effort at full disclosure, with "detail sufficient to enable those who did not participate in its preparation to understand and to consider meaningfully the issues raised by the proposed project." (*Laurel Heights Improvement Association v. Regents of University of California* (1988) 47 Cal.3d 376, 405 (*Laurel Heights I*); Cal. Code Regs., tit.14 ("Guidelines"), § 15151.)

In reviewing an EIR, courts determine whether the agency prejudicially abused its discretion by: (1) failing to proceed in the manner required by law, or (2) reaching a decision or determination that is not supported by substantial evidence. (*Laurel Heights I*, *supra*, 47 Cal.3d at 392.) "A reviewing court must adjust its scrutiny to the nature of the alleged defect, depending on whether the claim is predominantly one of improper procedure or a dispute over the facts." (*Vineyard Area Citizens for Responsible Growth v. City of Rancho Cordova* (2007) 40 Cal.4th 412, 435 (*Vineyard*).)

If an EIR fails to address an issue or omits essential information, courts employ de novo review to determine whether the agency violated the statute's disclosure requirements. (*Banning Ranch Conservancy v. City of Newport Beach* (2017) 2 Cal.5th 918, 935 (*Banning Ranch*).) Similarly, the sufficiency of an EIR's discussion of environmental impacts is reviewed de novo. (*County of Fresno*, *supra*, 6 Cal.5th at 514 ["whether a description of an environmental impact is insufficient because it lacks analysis or omits the magnitude of the impact is not a substantial evidence question."].) An EIR must analyze every issue for which the record contains substantial evidence supporting a "fair

argument" of significant impact. (*Visalia Retail*, *LP v. City of Visalia* (2018) 20 Cal.App.5th 1, 13 (*Visalia Retail*); *Protect the Historic Amador Waterways v. Amador Water Agency* (2004) 116 Cal.App.4th 1099, 1109 (*Amador Waterways*).)

Courts use the "substantial evidence" test to review an agency's factual conclusions. (*Vineyard*, *supra,* 40 Cal.4th at 435.) But "the existence of substantial evidence supporting the agency's ultimate decision . . . *is not relevant* when one is assessing a violation of [CEQA's] information disclosure provisions." (*Communities v. Richmond*, *supra*, 184 Cal.App.4th at 82 (italics added).) While substantial evidence review defers to an agency's role as fact-finder, such deference does not abdicate vigorous judicial review. (*Laurel Heights I*, *supra*, 47 Cal.3d at 409, fn. 12 ["We do not suggest that a court must uncritically rely on every study or analysis presented by a project proponent in support of its position. A clearly inadequate or unsupported study is entitled to no judicial deference."].)

Argument

A. The EIR's Analyses of Growth Inducement and Population and Housing Impacts are Inadequate[2]

1. Facts Regarding Growth Inducing and Population/Housing Impacts

The campus population of students, faculty, staff, patients, and visitors is currently almost 18,000 and would increase due to the Project by almost 8,000 people by 2050, for a total campus population of over 25,000. (AR 4143; 4262; 1979.) The EIR explains that CPHP-induced population growth by 2050 in San Francisco would be about 7,300 and in the surrounding four counties about 5,500 persons. (AR 4262; 1979.) The EIR does not disclose campus-related employment, but indicates the Project would add over 4500 staff and faculty positions and 3400 related jobs by 2050; a total creation of about 8,100 new jobs. (AR 4143; 4264.)

The CPHP as proposed and evaluated in the EIR would develop 762 units of on-campus housing for students, faculty, and staff by 2050. (AR 13; 3670; 3675-76; 4262; 4145). At the eleventh hour before approving the CPHP, UC decided to build another 1,263 off-campus housing units. (AR 13; 262.) These off-campus units are not included in the EIR's project description, analysis of growth inducing impacts, analysis of population and housing impacts, or Mitigation Monitoring and Reporting Program ("MMRP"). (AR 3643-86; 4262-65; 4142-49; 6577-6607).

2. Introduction to Growth Inducement and Population/Housing Impacts

The EIR commits several legal errors in its analysis of off-campus housing displacement effects. It uses thresholds of significance that exclude consideration of substantial evidence that such impacts

[2] The issues in this section are "exhausted" in comments at AR 5822; 5878-84; 5894-5901; 758-59; SAR 63067-68. "SAR" refers to the proposed Supplemental Administrative Record attached to Petitioner's Motion to Augment Administrative Record.

may be significant. (*Visalia Retail*, *supra*, 20 Cal.App.5th at 13 [EIRs must analyze every issue for which the record provides a "fair argument" of significant impact]; *Amador Waterways*, *supra*, 116 Cal.App.4th at 1108-1109 ["thresholds cannot be used to determine automatically whether a given effect will or will not be significant"].)

As the Project would create many more jobs than houses, it would contribute to the severe existing "jobs/housing imbalance" in San Francisco and the Bay Area. When the people employed in an area greatly exceed available affordable housing, economic and social consequences lead to adverse impacts on the physical environment — within the purview of CEQA. Housing costs increase, driven by high demand and low supply, resulting in population displacement by "gentrification," as people with lower income are forced to seek lower housing costs elsewhere. The EIR omits analysis of such impacts, erroneously dismissing them as "social and economic."

CEQA recognizes a "significant effect on the environment" where "effects of a project will cause substantial adverse effects on human beings, either directly or indirectly." (§ 21083 (b)(3).) The San Francisco Department of Public Health has published guidance for assessing the effects of housing displacement caused by development projects, finding that physical effects include stress, unsafe housing, crowding, homelessness, unmet transport needs, and increased service needs. (AR 6867, 6869-70 ["Inadequate or unaffordable housing forces San Francisco residents into crowded or substandard conditions; requires them to compromise access to jobs and services, and quality education; and requires them to work multiple jobs to make ends meet"].)

CEQA requires that an EIR include a detailed statement of the growth-inducing impact of a proposed project. (§ 21100 (b)(5); Guidelines, § 15126.2 (e) [an EIR must "[d]iscuss the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment"].) A project has significant impacts if it would "induce substantial population growth in an area, either directly . . . or indirectly . . . ," or if it would "[d]isplace substantial numbers of people, necessitating the construction of replacement housing elsewhere." (Guidelines, Appendix G, §§ XIV(a), (b)).) The interplay between a project's economic and social effects is explained in the Guidelines at section 15064 subdivision (e):

> Economic or social changes may be used to determine that a physical change shall be regarded as a significant effect on the environment. Where a physical change is caused by economic or social effects of a project, the physical change may be regarded as a significant effect in the same manner as any other physical change resulting from the project. . . . If the physical change causes adverse economic or social effects on people, those adverse effects may be used as a factor in determining whether the physical change is significant. For example, if a project would cause overcrowding of a public facility and the overcrowding causes an adverse effect on people, the overcrowding would be regarded as a significant effect.

(*Citizen's Association for Sensible Development v. County of Inyo* (1985) 172 Cal.App.3d 151, 170-71 (*County of Inyo*) ["the lead agency shall consider the secondary or indirect environmental consequences of economic and social changes"].)

3. The EIR Omits Analysis of the CPHP's Off-Campus Housing Displacement Effects

The EIR analyzes "growth inducing" and "population and housing" impacts in separate chapters (AR 4262 [Ch 5.4]; 4137 [Ch 4.12]) but acknowledges that they are closely related. (AR 2097-99, 4262-64.) The EIR recognizes "the pressing need for affordable housing in San Francisco." (AR 3675-76.) The EIR concedes that "[c]ampus population growth under the proposed CPHP would not be entirely accommodated by the existing and new housing on site, and therefore would result in indirect housing demand beyond the campus site." (AR 4262.) Despite these facts, the EIR fails to analyze the off-campus housing displacement effects of CPHP-induced increases in student, faculty, and staff populations, new jobs, and housing demand.

For "population and housing" impacts, the EIR establishes three "significance criteria," querying whether the CPHP would:

> a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?
> b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?
> c) Exceed the LRDP EIR standard of significance by creating a demand for housing outside the market area where the facilities or site are located?

(AR 4142.) The EIR explains that criteria a) and c) are addressed in Impact POP-1 and criterion b) is addressed in Impact POP-2. (AR 4142.)

Impact POP-I relates to "unplanned population growth" and the creation of "demand for housing outside the market area." (AR 1979-83.) Impact POP-2 ostensibly relates to whether the CPHP would "displace substantial numbers of existing people or housing" that would "necessitate the construction of replacement housing elsewhere." (AR 1983, 4147.) The EIR admits that the project would draw thousands of new residents to the area; Impact POP-1 acknowledges "the housing demand associated with employment growth under the proposed CPHP." (AR 1982; 4146.) But while the EIR acknowledges that the CPHP-induced increase in population growth and associated demand for housing in the City's housing-short environment might indirectly displace residents and increase housing demand, its analyses of Impacts POP-1 and POP-2 do not analyze Project "housing displacement" effects in San Francisco or in the campus environs. The EIR discusses Impact POP-2 only as to temporary displacement of tenants in the Aldea housing complex on campus. (AR 1983-84, 4147.)

The EIR erroneously contends that gentrification is merely a social impact that need not be analyzed. (AR 5797-5800.) The EIR deploys thresholds of significance that artificially confine analysis to on-campus effects. It then fails to assess the indirect physical effects of gentrification/displacement as outlined by the Department of Public Health. (AR 5879, 5989; 6867-85.) The ignored effects include the CPHP-induced need for building new housing, which is a significant environmental impact. (*Ante*; Guidelines, Appendix G, § XIV (b).) The EIR's analysis of Impacts POP-1 and POP-2 and the FEIR's responses to comments as to those impacts are thus either irrelevant to the claimed legal error or not supported by substantial evidence.

Urban planner Terry Watt, ACIP [American Institute of Certified Planners], provided substantial evidence supporting a fair argument that the CPHP may cause a significant impact on housing demand in San Francisco; to wit: (1) the City is suffering a severe shortage of housing as well as a severe shortage of affordable housing; (2) for well over a decade, new jobs in the City far outstrip the rate of construction of new housing; and (3) the Project would exacerbate both of these existing conditions. (AR 5894-5901; 6711-13.) The EIR was thus required to analyze and mitigate the impact, and did not. (*Visalia Retail*, *supra*, 20 Cal.App.5th at 13.)

As Ms. Watt explained, the EIR fails to disclose that while Project-generated demand for housing would vastly outstrip construction of Project-related housing, San Francisco and the region have been grossly under-building while generating significant new jobs. In fact, the EIR provides no information about the current local and regional housing crisis, housing availability in the surrounding neighborhood and City, or affordability. The EIR fails to describe typical anticipated jobs and salaries of new faculty and staff, critical to estimating the percent that may qualify — along with students — as low income or very low income and likely require new low-cost housing. The EIR fails to acknowledge or offer mitigation for the fact that UCSF is a major contributor to the affordable housing crisis and would exacerbate that crisis by building out the CPHP without providing additional units affordable to new students, faculty, staff, and employees of supporting services. (AR 5894-5901.)

Since the record contains a fair argument that impacts may be significant, the EIR's omission of these analyses is prejudicial legal error. The standard for whether information omitted from an EIR is "essential" is similar to whether any procedural violation of CEQA is prejudicial. For the omission of essential information, "[t]he ultimate inquiry . . . is whether the EIR includes "enough detail 'to enable those who did not participate in its preparation to understand and to consider meaningfully the issues raised by the proposed project.'" (*County of Fresno*, *supra*, 6 Cal.5th at 516.) Similarly, "omission in an EIR's significant impacts analysis is deemed prejudicial if it deprived the public and decision makers of

substantial relevant information about . . . likely adverse impacts." (*Neighbors for Smart Rail v. Exposition Metro Line Construction Authority* (2013) 57 Cal.4th 439, 463.)[3]

In addition to failing to assess physical effects of displacement and gentrification, the EIR erred by limiting analysis to on-campus effects. CEQA requires that an EIR evaluate, and that public agencies mitigate or avoid, significant effects of projects in the "area which will be affected." (*City of San Diego v. Board of Trustees of California State University* (2015) 61 Cal.4th 945, 957 (*City of San Diego*); *City of Marina*, *supra*, 39 Cal.4th at 367 ["CEQA does not . . . limit a public agency's obligation to mitigate or avoid significant effects to effects occurring on the agency's own property"]; Guidelines, § 15360.)

This rule applies to UCSF with particularity because CEQA and the Education Code require that UC analyze and mitigate off-campus impacts. (§ 21080.09 (b); Ed. Code, § 67504 (b)(1) ["the expansion of campus *enrollment and facilities* may negatively affect the surrounding environment. Consistent with . . . CEQA, it is the intent of the Legislature that the University of California sufficiently mitigate significant off-campus impacts related to campus growth and development" (italics added)]; *Save Berkeley's Neighborhoods v. Regents of University of California* (2020) 51 Cal.App.5th 226, 231 ("[G]rowth includes student enrollment increases, which the Legislature has acknowledged 'may negatively affect the surrounding environment'" [citing Ed. Code, § 67504 (b)(1)]).) The EIR's narrow focus on the Project's growth-inducing potential and tenant relocation impacts *on campus* ignores the physical impacts of CPHP-induced growth that would occur in the surrounding area.

The FEIR's response to comments raising concerns about housing are non-responsive or reflect legal errors discussed in the next section. Master Response 14 simply restates what the DEIR said about growth-inducing and population/housing impacts. (AR 5792-96.) It provides no new analysis in response to the comments. For example, it states that the Draft EIR "finds that the new households would create a demand for housing that would not be entirely accommodated by the existing and new housing on the Parnassus Heights campus site; that the result would be housing demand (and associated population growth) beyond the campus site;" and that while San Francisco

> . . . is the primary area that would be affected directly by CPHP-related population and housing effects, effects would extend beyond San Francisco to neighboring counties in the Bay Area. The Draft EIR explains that it would be speculative to characterize the site-specific environmental effects resulting from the development of such off-site housing as the development would occur over a large five-county area and over a period of time (note that the CPHP covers a period of 30 years).

[3] See also *San Joaquin Raptor I*, *supra*, 27 Cal.App.4th at 721-722 ["error is prejudicial 'if the failure to include relevant information precludes informed decisionmaking and informed public participation, thereby thwarting the statutory goals of the EIR process,'"], quoting *Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692, 712 (*Kings County*)].

(AR 6796.) The response artfully evades the question presented by the comments regarding the nature and extent of impacts on the community and the environment of additional affordable housing demand in a city with a dire shortage.

Master Response 14 also contends that the comments "conflate the conclusions of the population and housing analysis . . . with the CPHP's growth inducing effects . . . to assert that the Draft EIR is seeking to diminish the significance of the effects of the project on housing" and that "the two analyses are distinctly different in the impacts that they address." (AR 5796.) This response is immaterial. The EIR is required to analyze and identify mitigation for the CPHP's housing displacement impact; it fails to do so as described above, and the response fails to explain how or why any purported differences between population/housing and growth-inducing impacts under CEQA are relevant.

Master Response 15 makes two legal arguments, *i.e.*, that gentrification need not be studied because it is *only* a social and economic effect *and* that analyzing the indirect effect on the physical environment of the gentrification caused by the CPHP would be "speculative." (AR 5797-5800.) Both arguments constitute legal error.

The response cites appellate decisions for the proposition that gentrification is a social and economic effect. (AR 5798-800.) It fails to explain that the cases recognize that where substantial evidence supports a fair argument that a project's social and economic effects may indirectly lead to significant impacts on the physical environment, they must be studied in an EIR. (*E.g.*, *Joshua Tree Downtown Business Alliance v. County of San Bernardino* (2016) 1 Cal.App.5th 677, 685 ["only if the loss of businesses affects the physical environment — for example, by causing or increasing urban decay — will CEQA be engaged"]; *Maintain Our Desert Environment v. Town of Apple Valley* (2004) 124 Cal.App.4th 430, 446 ["social, economic and business competition concerns are not relevant to CEQA analysis unless it is demonstrated that those concerns will have a significant effect on the physical environment"]; *Goleta Union School Dist. v. Regents of University of California* (1995) 37 Cal.App.4th 1025, 1030-31 ["An EIR may trace a chain of cause and effect from a proposed decision on a project through anticipated economic or social changes resulting from the project to physical changes caused in turn by the economic or social changes"].)

As noted above, Ms. Watt's expert opinion provides substantial evidence supporting a fair argument. (*E.g.*, AR 5900 ["Based on accurate information about the pre-Covid SF and Bay Area housing crisis (summarized above), it can reasonably be concluded that the addition of 5,200 students, faculty and staff by 2050 and only 984 units produced, the housing need generated constitutes a significant impact"].) The EIR cannot lawfully omit any analysis of the issue.

The EIR's conclusion that the analysis would be "speculative" is unsupported by fact. (*Santiago County Water Dist. v. County of Orange* (1981) 118 Cal.App.3d 818, 831 ["The EIR must contain facts and analysis, not just the bare conclusions of a public agency"].) Ms. Watt details many types of information the EIR could and should have developed to conduct the required analysis. (AR 5894-5901.) UC failed to "use its best efforts to find out and disclose all that it reasonably can." (Guidelines, § 15144.) In *Stanislaus Audubon Society*, *Inc. v. County of Stanislaus* (1995) 33 Cal.App.4th 144, for example, the Court found substantial evidence that a proposed country club could induce housing development. As a result, it was inappropriate for the County to postpone review of the likely environmental effects until such effects had manifested. (*Id*. at158-59; see also *Napa Citizens for Honest Government v. Napa County Board of Supervisors* (2001) 91 Cal.App.4th 342, 370-71 (*Napa Citizens*) [an agency may not defer analysis of housing effects simply because the nature and extent of such development is unknown]; *City of Antioch v. City Council* (1986) 187 Cal.App.3d 1325, 1338.)

In sum, the EIR fails to include mandatory analysis of whether CPHP-induced increases in population and demand for housing would indirectly cause significant impacts on the physical environment and people off-campus by displacing people from their homes and creating a need for construction of new housing.

4. The EIR Incorrectly Applies "Ratio Theory" and Improper Baseline to Growth Inducement and Population and Housing Impacts [4]

The EIR's conclusion that CPHP growth inducement and population/housing impacts would be less than significant is based on additional errors of law. The EIR states:

> Implementation of the proposed CPHP would induce population growth in the Bay Area, but the population growth would *not be substantial in comparison* to growth that is projected and planned for San Francisco and the four study area counties in Plan Bay Area 2040 and the local general plans for the study area communities. Further, the population growth would not result in a demand for new housing that would exceed the capacity of the five-county market area.

(AR 1981; 4145 (italics added).) The EIR's rationale that the CPHP's growth is "not substantial in comparison" to growth projected for San Francisco and the four-county study area invokes the discredited "ratio theory."

CEQA prohibits such "drop in the bucket" analysis. (*Cleveland National Forest Foundation v. San Diego Assn. of Governments* (2017) 3 Cal.5th 497, 515 (*Cleveland I*) ["SANDAG's conclusory statement that its role in achieving the Executive Order's 2050 emission reduction target is 'likely small' is not a valid reason for rejecting the target as a measure of significance"]; *San Francisco Baykeeper, Inc. v. State Lands Commission* (2015) 242 Cal.App.4th 202, 223 ["this approach 'avoids analyzing the

[4] These issues are "exhausted" in comments at AR 5880.

severity of the problem and allows the approval of projects which, when taken in isolation, appear insignificant, but when viewed together, appear startling.'"]; *Friends of Oroville v. City of Oroville* (2013) 219 Cal.App.4th 832, 841-42; *Communities for a Better Environment v. California Resources Agency* (2002) 103 Cal.App.4th 98, 114 (*CBE v. Resources*) ["the guiding criterion on the subject of cumulative impact is whether any additional effect caused by the proposed project should be considered significant given the existing cumulative effect"]; *Kings County*, *supra*, 221 Cal.App.3d at 718.)

Also, by comparing CPHP-induced growth to *planned* growth in the entire City and region, the EIR improperly compares the impact to what is allowed in planning documents rather than what exists in the environment. (*Communities for a Better Environment v. South Coast Air Quality Management Dist.* (2010) 48 Cal.4th 310, 321, n.6 (*South Coast*); *Environmental Planning and Information Council v. County of El Dorado* (1982) 131 Cal.App.3d 350, 358-59.)

5. The EIR Piecemeals Analysis of the New Housing Initiative[5]

Only days before approval of the CPHP, UC and the City and County of San Francisco agreed to a Memorandum of Understanding in which UC agreed to build 1,263 off-campus housing units. (AR 13; 262; 1302; 1314-15; 1355.) As noted above, this construction was *not* included in the EIR's project description, analysis of growth inducing or population and housing impacts, or the MMRP. But this new housing became part of the Project. Therefore, the EIR was required to study and mitigate its impacts.

CEQA's conception of the term "project" remains broad to maximize protection of the environment. (*Friends of the Sierra Railroad v. Tuolumne Park & Recreation Dist.* (2007) 147 Cal.App.4th 643, 653; *San Joaquin Raptor I*, *supra*, 27 Cal.App.4th at 730). "This big picture approach to the definition of a project (*i.e.*, including "the whole of an action") prevents a proponent or a public agency from avoiding CEQA requirements by dividing a project into smaller components which, when considered separately, may not have a significant environmental effect." (*Nelson v. County of Kern* (2010) 190 Cal.App.4th 252, 270-271.) Lead agencies must also evaluate the environmental impacts of reasonably foreseeable future activities associated with a CEQA project that may contribute to significant environmental effects. (*Laurel Heights I*, *supra*, 47 Cal.3d at 395-396.) This obligation attaches whether the new housing is considered part of the Project, a foreseeable future activity, or a separate project subject to cumulative effects analysis; one way or the other the EIR must conduct the analysis. (*San Joaquin Raptor I*, *supra*, 27 Cal.App.4th at 733.) Construction of off-campus housing is a reasonably foreseeable future activity associated with implementation of the CPHP.

Moreover, CEQA does not permit last minute changes to the project description. (*Washoe Meadows Community v. Dept. of Parks & Recreation* (2017) 17 Cal.App.5th 277 ["[F]or a project to be

[5] These issues are "exhausted" in comments at AR 750-753; SAR 3067-68.

stable, the DEIR, the FEIR, and the final approval must describe substantially the same project."]) "The defined project and not some different project must be the EIR's bona fide subject." (*Concerned Citizens of Costa Mesa v. 32nd Dist. Agricultural Assn*. (1986) 42 Cal.3d 929, 934.)[6] After adding 1,263 residential units, the DEIR, FEIR, and Findings do not describe the Project.

The EIR's omission of any analysis of whether CPHP-induced housing demand would cause significant environmental effects by displacing people from their homes and construction of new housing is a prejudicial legal error warranting issuance of a peremptory writ. Its absence precludes "those who did not participate in its preparation to understand and to consider meaningfully the issues raised by the proposed project.'" (*County of Fresno*, *supra*, 6 Cal.5th at 516).

B. The EIR Fails to Lawfully Assess Impacts on Beach Water Quality[7]

1. Introduction and Standard of Review for Beach Water Quality Claims

CEQA requires that an EIR evaluate, and that agencies mitigate or avoid, significant effects of projects in the "area which will be affected by a proposed project." (*City of San Diego*, *supra*, 61 Cal.4th at 957; Guidelines, § 15360.) The project description is the activity the EIR evaluates for environmental impact (*Nelson v. County of Kern* (2010) 190 Cal.App.4th 252, 271-272; § 21065), while the environmental setting (i.e., baseline) is the condition of the environment against which the EIR will evaluate project changes for environmental harm (*South Coast*, *supra*, 48 Cal.4th at 315). Therefore, CEQA requires that an EIR describe the environmental setting. (*Ibid*; *Friends of the Eel River v. Sonoma County Water Agency* (2003) 108 Cal.App.4th 859, 874 (*Eel River*); Guidelines, § 15125.) An EIR's description of the environmental setting must also describe relevant regulatory actions by other agencies that affect the setting. (*Eel River*, *supra*, 108 Cal.App.4th at 874 ["the EIR's description of the Project's environmental setting is deficient because it does not disclose . . . the fact that FERC is considering proposals to curtail these diversions in order to prevent harm to these species"].)

Here, the DEIR fails to describe either physical or regulatory components of the environmental setting as they relate to potential significant impacts on beach water quality. The DEIR then fails to assess Project impact on that water quality, which is severely degraded. The whole issue is ignored. (AR 1895-1911 [DEIR, Ch.4.9].) Extensive comments, including data showing current water quality conditions, explained how the Project's admitted increases in waste and storm water discharges would exacerbate this pollution. (AR 6052-65, 7461-8889.) Because substantial evidence supports a "fair argument" that the Project may cause a significant impact on beach water quality, the EIR was required

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[6] Whether an EIR correctly describes a project is a question of law, subject to de novo review. (*South of Market Community Action Network v. City & County of San Francisco* (2019) 33 Cal.App.5th 321, 332.)

[7] The issues in this section were "exhausted" at AR 6052-65; 856-862; 7461-8889.

to analyze the issue. (*Visalia Retail*, *supra.)* The claim that the EIR omitted essential information is reviewed de novo. (*County of Fresno*, 6 Cal.5th at 516.)

2. The DEIR's Analysis of Impacts on Water Quality

The DEIR discloses that the project would add about 2.0 million square feet of new space and generate about 0.18 mgd (million gallons per day) of new wastewater/sewage. (AR 2084.) The EIR assesses this impact solely in terms of whether it may require construction of new wastewater treatment capacity, which construction might cause secondary environmental impacts. (AR 2063-91.) The DEIR concludes that such new construction would not be needed because "[w]astewater flows from the Parnassus Heights campus site would be directed to the OSP [Oceanside Treatment Plant]" that "has about 26 mgd of excess dry weather treatment capacity, which is adequate to accommodate the increase in flow generated by the net new development envisioned under the proposed CPHP." (AR 2084.)

With respect to stormwater discharges, the DEIR discloses that the campus drains both west to the OSP and east to the Southeast Treatment Plant (SEP) and that San Francisco operates a combined sewer system (CSS) that combines stormwater with sewage for treatment at these plants. The EIR concludes that impacts on surface water quality would be less than significant because the Project-induced increase in the acreage of impervious surfaces is only 4% compared to the current acreage of impervious surfaces on campus, and because operation of the CSS, the OSP, and the SEP is regulated by the San Francisco Regional Water Quality Control Board (Water Board) through permits issued pursuant to the National Pollutant Discharge Elimination System (NPDES) established by the federal Clean Water Act and the state Porter-Cologne Water Quality Control Act. (AR 1905-06.) The DEIR reaches this conclusion without quantifying the increase in stormwater discharge associated with the increase in impervious surface, without mentioning beach water quality or its severely degraded condition, and without a single word devoted to how combined Project-induced increases in sewage and stormwater discharges might exacerbate these conditions.

In addition to the increase in impervious surfaces and unquantified stormwater runoff from the "campus core," the DEIR discloses additional increases in impervious surfaces outside the campus core. (AR 1906.) The DEIR concludes these increases would also not cause significant impacts because of the "same or similar regulatory requirements as those described" for the campus core and because improvements constructed outside the campus boundary would be subject to "construction site runoff requirements and post-construction stormwater controls in accordance with the City Public Works Code and in compliance with the City's Stormwater Management Ordinance." (AR 1906.)

This portion of the DEIR is singularly uninformative. As it did with the increases in runoff from the campus core area, the DEIR provides no clues regarding the degree of increased stormwater runoff

associated with the increase in impervious surfaces outside the core. Also, while the DEIR intimates that off-campus facilities would be subject to San Francisco's "post-construction stormwater controls," it provides no information on the extent to which these controls might reduce CPHP-caused increases in runoff. As it does with Project-generated increases in sewage, the DEIR also relies on "the relatively small change" in Project-generated increases in stormwater discharge to conclude the impact on "stormwater drainage capacity, or additional sources of polluted runoff would be less than significant." (AR 1908.) In sum, the DEIR fails to assess whether increases in sewage and stormwater discharges, which are combined in the city's CSS, may cause significant impacts on beach water quality.

a. The DEIR Fails to Describe San Francisco's Degraded Beach Water Quality

Comments documented the degraded condition of San Francisco's beach water quality. (AR 6055-57.) The San Francisco Public Utilities Commission (SFPUC) monitors shoreline bacteria (*i.e.*, total coliform, e. coli and enterococcus) at sixteen stations around the perimeter of San Francisco where water contact recreation occurs, including additional monitoring whenever a treated discharge from the City's combined sewer system affects a recreational beach. When monitoring shows that bacterial contamination exceeds state health standards, the affected beach is "posted" to discourage water contact recreation. This database shows that between January of 2016 and June of 2020, there were 131 days on which at least one ocean side beach was posted for exceeding state health standards for any of the three types of bacteria tested; 333 days on which at least one bay side beach was posted, and 464 days on which at least one beach was posted.[8] (AR 6056; 7461-75 [Figures 1 through 15 summarizing beach water quality monitoring data January 1, 2016, though June 30, 2020].)[9] These results are in Table 2.[10]

Table 2 [Summary of Figures 1-15]

January 1, 2016, through June 30, 2020	# of days when at least one beach was posted for at least one exceedance of a state health standard [Blue Bars]	# of beach postings for exceedances of state health standards or due to combined sewer system (CSS) overflow [Yellow Bars]	# of exceedances of any state health standard at any beach [Red Bars]
Ocean Side beaches	131	210	298
Bay Side beaches	333	546	936
Ocean and Bay beaches	464	756	1,234

[8] Ocean side beaches are: Baker, China, Ocean, and Fort Funston. Bay side beaches are: Crissy Field, Aquatic Park, Mission Creek, Candlestick Point State Recreation Area, and Islais Creek.

[9] Figures 1 through 15 present monthly totals of days on which San Francisco ocean side and bay side beaches exceeded state health standards for any of the three types of bacteria tested.

[10] For January 1, 2016, though June 30, 2020, these figures show monthly totals for ocean side beaches (Figures 1-5), bay side beaches (Figures 6-10), and ocean and bay side beaches (Figures 11-15.) The SFPUC's raw water quality monitoring data for this time period is at AR 8047-8172.

The DEIR fails to disclose this information. Remarkably, the DEIR also fails to disclose that the waters of San Francisco Bay are listed as impaired for bacterial contamination under section 303(d) of the Clean Water Act ("CWA"), or that in 2016, the State Water Resources Control Board adopted a Total Maximum Daily Load for bacterial contamination for the bay. (AR 6056-57; 7484-86 [Ex 2]; 7488-7502 [Ex 3].)[11] Thus, any discharge exceeding the City's bacterial load allocation violates the CWA. In short, the current environmental setting/baseline at San Francisco's ocean side and bay side beaches is one of severe water quality degradation and the DEIR ignores this elephant in the room.

b. The DEIR Fails to Describe the Dysfunctional Regulatory System Governing San Francisco's Sewage Treatment Plants

As noted above, the Water Board regulates San Francisco's operation of the OSP and SEP through NPDES permits.[12] These permits require the SFPUC to submit monthly and annual self-monitoring reports (SMRs) to the Water Board, by online upload to the California Integrative Water Quality System database (CIWQS). The SMRs include raw data regarding water quality and narrative cover letters. The cover letters describe instances of permit non-compliance. The CIWQS database also includes notices of violations issued by the Water Board.

All instances of NPDES permit non-compliance at the OSP and SEP recorded from January 2016, to June 2020, are presented at AR 8004-22 [Ex 10] and AR 8024-45 [Ex 11], respectively. There were 171 instances of non-compliance and 44 Notices of Violation.[13] All instances of permit non-compliance at the OSP and SEP for the years 2008 through 2014 are presented at AR 7994-8002 [Ex 9]. The OSP and SEP have consistently failed to comply with their NPDES permits, including permit terms limiting bacterial contamination in their effluent discharges to the ocean and bay. Indeed, in 2019 the U.S. Environmental Protection Agency sent two Notice of Violation letters to the City detailing many of the worst violations of federal and state water pollution control laws due to bacterial contamination. (AR 7984-86 [Ex 7]; 7988-91 [Ex 8].) The DEIR ignores all of this.

c. The DEIR's Omission of Essential Information and Analysis Regarding Beach Water Quality Impacts Is Prejudicial

The DEIR's handling of impacts on beach water quality precluded meaningful consideration of the issue. The DEIR fails to describe the most important components of the environmental and regulatory settings relating to beach water quality, including severely degraded water quality conditions

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[11] The Water Board's Order and Basin Plan Amendment to establish a Total Maximum Daily Load for bacteria at San Francisco bay beaches are AR 7484-86 [Ex 2] and 7488-7502 [Ex 3], respectively.

[12] The OSP is governed by NPDES Permit No. CA0037681, by way of Water Board Orders R2-2009-0062 (AR 7504-7663 [Ex 4]) and R2-2019-0028 (AR 7665-7814 [Ex 5]). The SEP is governed by is NPDES Permit No. CA0037664; Order No. R2-2013-0029. (AR 7816-7982 [Ex 6].)

[13] See AR 8177- 8501 [Ex 13], for the OSP, and AR 8503-8720 [Ex 14], for the SEP.

and the demonstrated inability of San Francisco's CSS to prevent these conditions. (*San Joaquin Raptor I*, *supra*, 27 Cal.App.4th at 722-30; *Eel River*, *supra*, 108 Cal.App.4th at 874.) Establishing the baseline environmental setting at the beginning of the CEQA process is a fundamental requirement so that project changes can be seen in context and significant effects accurately identified. (*Communities v. Richmond*, *supra*, 184 Cal.App.4th at 89.) Here, the DEIR ignores not only the baseline but the entire issue. Readers of the DEIR would have no idea that beach water quality is degraded, that regulatory efforts have failed to clean it up, or that the project may make it worse.

The DEIR also fails to describe the Project in enough detail to inform any analysis of water quality impacts, most egregiously with respect to increases in impervious surfaces outside the campus core. In addition, discussion of water quality impacts fails to account for stormwater and sewage being combined in the same pipes for conveyance to the OSP and SEP. Instead, the DEIR describes these waste streams in separate chapters, minimizing their combined impact. (AR 1895-1911; 2063-91.)

d. The DEIR's Reliance on the "Ratio Theory" and Another Agency's Regulatory Program are Errors of Law

The DEIR concludes that water quality impacts would be less than significant based on the relatively small increases in Project-generated sewage to be conveyed to the OSP and the relatively small increases in impervious surfaces that would increase stormwater runoff to the OSP and SEP. These are errors of law. As discussed *ante*, the "ratio" approach is a legal error.

The DEIR also bases its conclusion that water quality impacts would be less than significant on its unlawful reliance on other agencies' regulatory programs. As discussed, regardless of the DEIR's assertion that the OSP has sufficient *dry weather capacity* to meet current and projected demand, and regardless of the fact that San Francsico's CSS is regulated by NPDES permits enforced by the Water Board, the waters at San Francisco beaches frequently exceed state bacterial health standards. This error is especially prejudicial where, as here, the relied-upon regulatory program is failing to prevent severe beach water pollution. (*Ebbetts Pass Forest Watch v. California Dept. of Forestry and Fire Protection* (2008) 43 Cal.4th 936, 957 (*Ebbetts Pass*) [error to conclude that compliance with pesticide restrictions precludes significant impact]; *Californians for Alternatives to Toxics v. Department of Food & Agriculture* (2005) 136 Cal.App.4th 1, 16.)

3. The FEIR Fails to Cure the DEIR's Omission of Essential Information Regarding Beach Water Quality Impacts and the FEIR's Response to Comments Is Legally Inadequate

Lead agencies must meaningfully respond to significant environmental comments on a Draft EIR. (*Santa Clarita Organization for Planning the Environment v. County of Los Angeles* (2003) 106 Cal.App.4th 715, 723 ["It is not enough for the EIR simply to contain information submitted by the

public and experts. Problems raised by the public and responsible experts require a good faith reasoned analysis in response"]; *Environmental Protection Information Center v. Johnson* (1985) 170 Cal.App.3d 604, 628 ["Non-specific, general, or conclusory responses unsupported by empirical information, scientific authorities or explanatory information "fail to crystallize issues"]; *People v. County of Kern* (1974) 39 Cal.App.3d 830, 841 [Responses to comments must "set forth in detail the reasons why the particular comments and objections were rejected."].)

a. The FEIR's Responses Confirm the DEIR's Omission of Essential Information

Extensive comments on the DEIR, including data showing current beach water conditions, explained how the Project's admitted increases in waste and storm water discharges would exacerbate pollution. (AR 6052-65, 7461-8889.)[14] The DEIR failed to discuss beach water quality but generally found that Project-related water quality impacts would be less than significant. (AR 1904.) In response to comments, the FEIR and Findings reversed field and found that beach water quality impacts could be significant. (AR 4062; 222-226; 5783-5788 [Master Response 12].) The FEIR concedes that comments on the DEIR made "the valid point that existing water quality in the Bay and the Ocean is negatively affected by wet weather discharges, and that condition is part of the CEQA baseline for evaluation of impacts." (AR 5784.) The FEIR, does not however, remedy the DEIR's failure to describe "existing water quality in the Bay and the Ocean," nor how it is "negatively affected by wet weather discharges," nor provide this missing information as "part of the CEQA baseline for evaluation of impacts." The FEIR does not analyze the extent of use of the waters at San Francisco beaches for water contact recreation like swimming, kayaking, surfing, kite boarding, wind-surfing, and fishing, nor the extent to which degraded water quality and the SFPUC's beach water quality postings dissuade people from engaging in water recreation. The Draft EIR's omission of essential information is unremedied.

The change from the DEIR's finding that the impact is *not* potentially significant to the FEIR's finding that it *is* potentially significant is also not accompanied by any new information regarding the nature and severity of the potentially significant impact. As a result, the DEIR omits essential information. (*County of Fresno*, *supra*, 6 Cal.5th at 519 ["a sufficient discussion of significant impacts requires not merely a determination of whether an impact is significant, but some effort to explain the nature and magnitude of the impact"]; *accord*, *Cleveland I*, *supra*, 3 Cal.5th at 514–15, 529.)

[14] The Draft EIR comment letter is at AR 6052-6065. The Figures and Exhibits submitted with the comment are at AR 7461-8889.

b. The FEIR's Responses Improperly Compress Analyzing the Significance of Impacts with Identifying Mitigation Measures

Instead of analyzing the significance of the beach water quality impact, the FEIR proposes mitigation by expanding Mitigation HYD-1. (AR 5786-88; 6544-50.) Substituting mitigation for impact analysis violates CEQA. (*Lotus v. Department of Transportation* (2014) 223 Cal.App.4th 645, 658 (*Lotus*) ["The failure of the EIR to separately identify and analyze the significance of the impacts . . . before proposing mitigation measures . . . precludes both identification of potential environmental consequences arising from the project and also thoughtful analysis of the sufficiency of measures to mitigate"]; *San Joaquin Raptor Rescue Center v. County of Merced* (2007) 149 Cal.App.4th 645, 663 (*San Joaquin Raptor II*) ["A mitigation measure cannot be used as a device to avoid disclosing project impacts"].)

c. The FEIR's Responses Require Recirculation of a Revised Draft EIR

Amendment of Mitigation HYD-1 to reduce a newly-identified potentially significant effect requires recirculation of a revised Draft EIR. (*Pesticide Action Network North America v. Department of Pesticide Regulation* (2017)16 Cal.App.5th 224, 252 (*Pesticide Action*); *Spring Valley Lake Assn. v. City of Victorville* (2016) 248 Cal.App.4th 91, 108 [recirculation required where EIR proposes "ostensibly feasible way to mitigate" impacts and "a complete redesign of the project's stormwater management system"]; *Gray v. County of Madera* (2008) 167 Cal.App.4th 1099, 1120 [EIR's failure to evaluate or discuss feasibility of water supply mitigation requires recirculation]; Guidelines, § 15088.5 (a).)

The new terms in Mitigation HYD-1 include applying San Francisco's regulatory program for stormwater control and modeling stormwater flows from the Parnassus campus to "demonstrate that future incremental increases in stormwater and/or wastewater from the campus site under the CPHP would not cause or contribute to any increase in overflow volumes from the City's CSS discharge structures." (AR 4064-65.) While this is an improvement over ignoring the problem, the FEIR simply assumes that HYD-1 would be effective in reducing the newly-identified significant impact to less-than-significant. This is insufficient. The FEIR's supporting evidence raises more questions than it answers. (AR 5787-88.) For example, would it be physically feasible to impound enough stormwater during the rainy season to reduce the campus contribution to the CSS and avoid contributing to CSS overflows?

Thus, recirculating a revised Draft EIR with the new mitigation and supporting evidence is required to provide opportunity for the public and other agencies to review and comment.

d. The FEIR's Responses Improperly Defer the Formulation of Mitigation Measures

Mitigation HYD-1 includes the post-approval deferral of formulation of mitigation based on future analyses outside of the EIR's public review process. Even if the DEIR had first analyzed the problem, which did not occur here, CEQA would not allow such deferral unless the EIR satisfied several criteria. The EIR would have to show that it was impracticable to develop mitigation during the CEQA process and that there is evidence that future mitigation is feasible and will be subject to specific performance standards. (Guidelines, § 15126.4 (a)(1)(B); *Golden Door Properties, LLC. v. County of San Diego* (2020) 50 Cal.App.5th 467, 518-525 (*Golden Door II*); *King & Gardiner Farms, LLC v. County of Kern* (2020) 45 Cal.App.5th 814, 858; *Cleveland II*, *supra*, 17 Cal.App.5th at 440-443 ["[i]mpermissible deferral of mitigation measures occurs when an EIR puts off analysis or orders a report without either setting standards or demonstrating how the impact can be mitigated in the manner described in the EIR"]; *California Clean Energy Committee v. City of Woodland* (2014) 225 Cal.App.4th 173 (*CCEC*) , 195 [a mitigation that does not commit the agency to specific action or standards is inadequate]; *POET, LLC v. State Air Resources Bd.* (2013) 218 Cal.App.4th 681, 740 (*POET I*) ["The deferral of the formulation of mitigation measures requires the agency to commit itself to specific performance criteria for evaluating the efficacy of the measures implemented."].)

Mitigation HYD-1 is a classic example of improperly deferred mitigation because it proposes a future process ungoverned by objective performance standards. An air pollution standard of "no increase in nitrogen oxide (NOx)" was held insufficient because the EIR established "no objective performance criteria for measuring whether the stated goal [*i.e.,* no net increase] will be achieved." (*POET I*, *supra*, 218 Cal.App.4th at 739-740.) Another case rejected a mitigation measure that proposed a "bilateral negotiation between a project proponent and the lead agency after project approval." (*Communities v. Richmond*, 184 Cal.App.4th at 92-6.) Here, MM HYD-1 is worse; it proposes a *unilateral* decision by the lead agency *after* project approval and *outside* of CEQA's public comment process.

Mitigation HYD-1 is also unenforceable. It includes no objective benchmarks, milestones, or reporting processes providing a basis for enforcement review or enforcement action by anyone outside of UCSF. CEQA requires that mitigations be enforceable. (*Lincoln Place Tenants Association v. City of Los Angeles* (2005) 130 Cal.App.4th 1491; *Federation of Hillside & Canyon v. City of Los Angeles* (2000) 83 Cal.App.4th 1252, 1261.) The lack of enforceability is illustrated by the Integrated Catchment Model (ICM) component of Mitigation Measure HYD-1, which includes many layers of contingency: establishing a baseline, conducting modeling, determining if new infrastructure is needed, determining UCSF's fair share, paying fair share cost, etc. (AR 5787.)

Mitigation HYD-1 contemplates that UCSF would pay "its proportional share of the costs of expanding the CSS." This measure is illusory because there is no adopted fair share fee program to turn the dollars into infrastructure. The EIR cannot find the impact less than significant based on UCSF's intention to pay a fair share of construction costs where there is no assured plan to build the infrastructure. (*Anderson First Coalition v. City of Anderson* (2005) 130 Cal.App.4th 1173, 1186-87.)

The FEIR admits that UCSF's contribution to combined sewer system overflows is potentially significant, but does not establish a threshold of significance for judging what degree of reduction of the contribution would reduce its contribution to less than "cumulatively considerable" in violation of CEQA. (*Lotus*, *supra*, 223 Cal.App.4th at 655 ["the EIR fails to identify any standard of significance, much less to apply one to an analysis of predictable impacts from the project"].)

UC was required — but failed — to revise the DEIR to analyze beach water quality impacts and to recirculate the revised DEIR for public and agency comment. The new information provided in the Final EIR triggers recirculation because it demonstrates that the DEIR circulated for comment on an issue of environmental import "was so fundamentally and basically inadequate or conclusory in nature that public comment was in effect meaningless." (*Laurel Heights Improvement Assn. v. Regents of University of California* (1993) 6 Cal.4th 1112, 1123, 1130 (*Laurel Heights II*); see also *Mountain Lion Coalition v. Fish & Game Com.* (1989) 214 Cal.App.3d 1043, 1052 ["If we were to allow the deficient analysis in the [DEIR] to be bolstered by a document that was never circulated for public comment . . . we would be subverting the important public purposes of CEQA"]; Guidelines, § 15088.5 (a)(4).)

C. The EIR Fails as an Informational Document Regarding Impacts to Transit Capacity

Three Muni lines run at the edge of the UCSF campus. These include the "N-Judah" line, which is the busiest in the Muni system. (AR 6097.) UC's findings acknowledge that the Project would have an impact on transit service: "The plan would increase traffic and demand for parking and public transit service." (AR 12.) Despite this, the DEIR failed to analyze the Project's impact on transit capacity:

> *Consistent with the CEQA Guidelines and the SF Guidelines*, the transportation impact analysis in this EIR analyzes the change to VMT [vehicle miles traveled] that would result from the implementation of the CPHP at the Parnassus Heights campus site. Changes to traffic operations in the study area (i.e., the level of service of project area intersections) and *transit operations (e.g. project generated transit ridership and effect on capacity utilization, potential delay to transit vehicles) is outside the scope of the CEQA analysis* and are not discussed below.

(AR 2035, italics added.)

The EIR further explains that impacts to transit are analyzed "for informational purposes only" in an appendix to the DEIR that "is provided for decision-makers' consideration, independent of the

environmental review process." (AR 2036.) The only purported analysis of transit impacts is contained in two Appendix paragraphs disclosing that the CPHP's generated vehicle trips and passenger loading activities "may periodically:

- Result in transit delay on Parnassus Avenue (6 Haight/Parnassus, 43 Masonic) and Irving Street (N Judah)
- Reduce accessibility by blocking multimodal transportation facilities, such as crosswalks, bicycle lanes, and/or transit stops."

(AR 3516.) The EIR Appendix further notes that "[T]here may be peak passenger travel periods where demand, either for the campus site overall, or for specific locations is greater than supply. During these periods there would be a higher chance of delay to transit or a reduction in access to transportation facilities." (AR 3517.) Relative to the inadequacy of this analysis, one expert traffic engineer noted that "[N]o feasibility study has been conducted on how much capacity is available to serve the UCSF expansion or how additional transit capacity can be provided to decrease solo vehicle trips." (AR 6097.) The DEIR applies no significance standard for impacts to transit capacity, makes no significance determination, and discussed no mitigation. The EIR's failure to analyze CPHP impacts on transit delay, and indirect increase to VMT is error that renders the EIR insufficient as an informational document.

1. Transit Delay Is a Cognizable Impact Under CEQA

While the DEIR is correct that automobile delay ("level of service" aka LOS) is no longer a CEQA measure of transportation impact, the same is not true for impacts to transit facilities. Impact to transit capacity is a relevant consideration under both the CEQA Guidelines and City Guidelines, with which the EIR purports to comply. (Guidelines, § 15064.3 (a)["[o]ther relevant consideration may include the effects of the project on transit"]; AR 991 [significance criteria include "[s]ubstantially delay public transit"]; 999 ["The department uses a quantitative threshold of significance and qualitative criteria to determine whether the project would substantially delay public transit"]; 1002 [required analysis for "public transit delay"]; 1005 [required cumulative analysis for "public transit delay"].) Guidelines Appendix G asks whether a project would "conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadways, bicycle and pedestrian facilities." (Guidelines, Appendix G, § XVII (a).) OPR's *Technical Advisory on Evaluating Transportation Impacts in CEQA* ("OPR Technical Advisory"), another document that the EIR purports to follow, includes a section entitled "Impacts to Transit" that provides in relevant part:

> Because criteria for determining the significance of transportation impacts must promote "the development of multimodal transportation networks" pursuant to Public Resources Code section 21099, subd. (b)(1), lead agencies should consider project impacts to transit systems and bicycle and pedestrian networks.

(AR 34406.) Rather than provide the required analysis, the FEIR doubles down on UC's position that

overcrowding a transit system is "not a CEQA concern." (AR 6120.) Incredibly, UC squarely points its finger at Muni to analyze the CPHP's impact on transit: "The CPHP is not responsible for analyzing the potential effects of Muni operational issues or changes, and Muni is expected to adjust operations accordingly." (AR 6113.) This is legal error. CEQA requires analysis of whether a project would overwhelm the existing transit system. (*Mission Bay Alliance v. Office of Community Investment & Infrastructure* (2016) 6 Cal.App.5th 160, 191 ["substantial evidence supports the conclusion that the Warriors can be expected to work with the transit agencies 'to provide additional . . . service' sufficient to mitigate the project's impacts on regional transit"].)

The FEIR asserts that UC's cramped view of its duties under CEQA is based "on the CEQA Guidelines and OPR Technical Advisory ["Advisory"]." (AR 6113.) As established above, Guidelines section 15064.3, subdivision (a) in no way supports omitting consideration of transit delay impacts. Similarly, the Advisory explains that "lead agencies should consider project impacts to transit systems and bicycle and pedestrian networks." (AR 34406.) While the Advisory also states that agencies "generally should not treat the addition of new transit users as an adverse impact," the "addition of new transit users" is not the same as overwhelming transit capacity. (AR 34406.) Further, the Advisory provides that impacts to transit capacity should be analyzed, at minimum, as a cumulative impact: "Increased demand throughout a region may, however, cause a cumulative impact by requiring new or additional transit infrastructure." (*Ibid*.)

2. Increased Transit Delay May Increase Vehicle Miles Traveled ("VMT")

Analysis of impacts to transit capacity is also required because overwhelming the transit system may have an indirect impact by increasing the Project's VMT. (AR 6096.) Transportation engineer Tom Brohard explained that "the table assigns relatively high percentages for transit use for faculty/staff/ students as well as residents. The higher transit percentages will likely go down if the transit system is overwhelmed and automobile use goes up." (AR 6096.) The CEQA Guidelines are in accord, noting that even a purely qualitative analysis of VMT "would evaluate factors such as the availability of transit." (Guidelines, § 15064.3 (b)(3).) A bare qualitative analysis is only allowed "if existing models or methods are not available." (*Ibid*.) Quantitative modeling is readily available for estimating VMT and transit impacts, and so must be utilized here. (AR 991-1003; *Berkeley Keep Jets Over the Bay Committee v. Board of Port Commissioners* (2001) 91 Cal.App.4th 1344, 1381 (*Berkeley Keep Jets*).)

In response, the FEIR inaccurately pronounced that "there is no evidence to suggest that transit crowding *alone* leads to an increase in VMT that would result in a significant impact under CPHP." (AR 6113-14, italics added.) This mischaracterization does not justify ignoring the issue. First, engineer Brohard's comment provides evidentiary support for the uncontroversial fact that overwhelming transit

would lead more people to choose automobiles. (AR 6096.) The City — which operates the transit system — agrees that "transit delay greater than one-half headway . . . might result in a significant impact . . . due to a substantial number of people riding transit switching to riding in private or for-hire vehicles." (AR 999].) Second, UC cannot justify ignoring transit overcrowding simply based on speculation that such overcrowding "alone" may not push VMT above the relevant significance standard. (Guidelines, § 15358 (a)(2) [requiring an EIR to analyze "indirect or secondary effects"].)

Moreover, even without transit overcrowding, the Project would increase VMT. (AR 6099 ["Here, VMT is shown to increase by 23% and 15% for the CPHP"].) Engineer Brohard explains that the existing transit system in the Project area may already be overwhelmed, so that the Project may result in higher VMT than disclosed in the DEIR. (AR 6096-97.) The EIR therefore fails as an informational document by lacking analysis as to whether the Project's predicted impact on transit overcrowding (AR 3516) would indirectly exacerbate the Project's acknowledged increase in VMT.

In summary, no authority supports UC's claim that transit overcrowding is "not a CEQA concern." (AR 6120.) The Guidelines, OPR Guidance, and San Francisco guidance demonstrate that it is a relevant consideration, and even provide methodology for analyzing the impact. Further, overcrowding transit may indirectly contribute to increased VMT. Finally, even if UC is correct that no significance standard is directly "applicable" due to its Constitutional status, that does not obviate the need for analysis where, as here, the record supports a fair argument of a significant impact.

D. The EIR Fails to Properly Analyze and Mitigate Construction Noise Impacts

Although construction-related impacts are sometimes trivialized because of their typically "short" duration compared to potentially indefinite operational impacts, that is not the case here — where the Project will be ongoing for nearly 30 years. The CPHP's "*Initial"* Phase projects would be under construction until 2030. (AR 1951.) The "*Future*" Phase of construction would go on for another twenty years — between 2030 and 2050. (*Id*.) This means that if UC starts construction in 2022 (as it says it will), "sensitive receptors" — people who live and work adjacent to and surrounding the Parnassus Heights campus would be exposed to nearly three decades worth of construction noise, activity and emissions. During that time, residences on all sides of the campus, some as close as 70 feet from active construction, would be menaced by sustained noise levels over 75 dBA. (AR 1956-57.)

The EIR attempts to minimize the extraordinary amount of expected noise, at times 27 dBA above ambient levels, by stating that they "would only occur a short percentage of the overall construction period." (AR 1955.) Considering the nearly three-decades of construction, this vague assertion is not reassuring. Potential health impacts of exposure should have been analyzed and effective mitigation identified, but were not. These failures violate CEQA and require revision of the EIR.

1. Predicted Noise Levels are Not Correlated to Identified Human Health Impacts

The EIR finds that construction activities implementing the CPHP would generate noise levels in excess of applicable standards, identified as a significant impact. However, the EIR must take the analysis a step further by correlating significant noise to potential health effects. (*County of Fresno*, *supra*, 6 Cal.5th at 520 [EIR failed to correlate significant emissions to human health impacts.].) The EIR violates CEQA because it fails to correlate significant construction noise impacts and resulting human health effects to neighbors.

CEQA requires an EIR to "identify and focus on the significant environmental effects of the proposed project…examin[ing] changes in the existing physical condition in the affected area," including "health and safety problems caused by the physical changes." (Guidelines, § 15126.2 (a).) This section "also suggests that a connection be drawn between . . . potential project emissions and human health impacts. Such a connection would meet CEQA's requirements." (*County of Fresno*, *supra*, 6 Cal.5th at 520.) If it is not scientifically possible to determine potential human health impacts, "the EIR itself must explain why, in a manner reasonably calculated to inform the public of the scope of what is and is not yet known about the Project's impacts." (*Ibid*.) Although *County of Fresno* addressed the need to correlate air emissions to human health, *Sierra Watch v. County of Placer* (2021) 69 Cal.App.5th 86 recently applied similar analysis to the effects of noise emissions on human health.

"CEQA requires that the EIR have made a reasonable effort to discuss relevant specifics regarding the connection between two segments of information already contained in the EIR, the general health effects associated with a particular pollutant and the estimated amount of that pollutant the project will likely produce." (*County of Fresno*, *supra*, 6 Cal.5th at 521.) As in *County of Fresno*, the Project EIR fails to correlate the Project's environmental effects with impacts to human health.

While the EIR contains a section titled "Health Effects of Environmental Noise" that identifies a list of "other potential health effects" from "high noise levels" (AR 1937), the EIR fails to identify the noise levels at which these health effects may occur, much less whether the Project's noise levels would trigger impacts. For example, the EIR generally states that noise results in "decreased performance for complex cognitive tasks, such as reading, attention span, problem solving, and memorization," but fails to identify whether and to what extent CPHP noise levels may cause these health impacts. (AR 1937.)

One commentor explained, "While the DEIR briefly mentions some of these 'other potential heath effects' from noise emissions, the DEIR does not correlate these various health effects (and others as reflected in WHO 2018) to noise emissions." (AR 6091.) UC responded that the discussion of health effects on DEIR pages 4.11-3 – 4 is provided as introductory information. (AR 6118.) The "introductory information" states that "noise can cause annoyance and can trigger emotional reactions like anger,

depression, and anxiety. WHO reports that, during daytime hours, few people are seriously annoyed by activities with noise levels below 55 dBA or moderately annoyed with noise levels below 50 dBA." (AR 1937.) Rather than address the health impacts identified by WHO, the noise section states:

> Construction equipment would comply with the City's Noise Ordinance restriction (noise level of 80 dBA or less at a distance of 100 feet), and the resultant predicted noise levels at the nearest receptors would be below this level. Therefore, project construction noise would not result in adverse health effects related to pain, the onset of hearing loss or other significant health effects.

(AR 1960.) This significance determination fails to correlate the level of noise that nearby residents would be exposed to for up to thirty years and whether those levels would produce health impacts described in the "introductory information." (AR 1937; see *County of Fresno*, *supra*, 6 Cal.5th at 520.)

Further, the EIR fails to connect large increases in dBA to potential health impacts. The EIR states that "analysis provided . . . indicates that noise levels from proposed peak demolition and construction activities at the closest receptors could exceed existing noise levels by as much as 27 dBA at receptors approximately 70 feet away." (AR 1951.) The EIR provides a table describing noise levels of normal construction equipment at 100 feet, and none lower than 70 dBA. (AR 1951.) Therefore, any residence within 100 feet would potentially be exposed to all-day noise levels of at least 70 dBA and as high as 80 dBA. (AR 1956.) The EIR fails to describe how this level of long-term noise would affect the health of neighbors or why that impact cannot yet be described. Our Supreme Court has identified this flaw: "Because the EIR as written makes it impossible for the public to translate the bare numbers provided into adverse health impacts or to understand why such translation is not possible at this time . . . the EIR's discussion of air quality" was inadequate." (*County of Fresno*, *supra*, 6 Cal.5th at 521.)

UC thus glosses over the health impacts that would result from CPHP construction noise. (AR 1959.) As held in *Berkeley Keep Jets*, *supra*, 91 Cal.App.4th at 1371 the "EIR's approach of simply labeling the effect 'significant' without accompanying analysis of the project's impact on the health of [] employees and nearby residents is inadequate to meet the environmental assessment requirements of CEQA"].) The EIR fails as an informational document because it does not correlate the admittedly high and long-lasting construction noise emissions to human health impacts on the surrounding community.

2. Noise Mitigation Measure NOI-1b Is Both Unenforceable and Impermissibly Deferred Mitigation

As discussed *ante*, the Guidelines allow deferral of some details of mitigation measures, to be developed after project approval. (Guidelines, § 15126.4, subd. (a)(1)(B).) However, CEQA requires that "the agency (1) commits itself to the mitigation, (2) adopts specific performance standards the mitigation will achieve, and (3) identifies the type(s) of potential action(s) that can feasibly achieve that

performance standard." (*Ibid.*) The CPHP EIR does not meet these requirements. Mitigation measure NOI-1b suffers from a myriad of flaws that renders it ineffective. It states:

> **CPHP Mitigation Measure NOI-1b: Construction Hours**
>
> Construction hours *shall be restricted* to the hours listed in the table below. In rare circumstances, *work may need to occur* outside of these work hour limits. In such cases, UCSF Community and Government Relations will receive advance notice from the project manager, at least one week in advance as feasible, and will engage the community to identify measures to minimize potential impacts. These measures may include, but not be limited to, restricting work to smaller time windows, condensing the overall duration of nighttime work to the degree feasible, and erecting temporary barriers to shield the short-term nighttime activity.

Construction Hours

	"Not Noisy" Work[1]		Noisy Work	
	Regular hours	**Extended hours[2]**	**Regular hours**	**Extended hours**
Monday - Friday	7:00 a.m. to 5:00 p.m.	5:00 p.m. to 8:00 p.m.	8:00 a.m. to 5:00 p.m.	
Saturday		8:00 a.m. to 5:00 p.m.		9:00 a.m. to 4:00 p.m.
Sunday		8:00 a.m. to 5:00 p.m.		

1 "Not Noisy" work = 80 decibels or less at 100 feet; "Noisy" work = more than 80 decibels at 100 feet.
2 Extended hours to be considered by UCSF Community and Government Relations with advance notice from the project manager.

(AR 1953, italics added.) The first sentence states that the construction hours "shall be restricted" as listed on the table; the next sentence states that work "may need to occur outside of these work hour limits." (*Ibid.*) NOI-1b does not impose finite restrictions as construction may proceed 24 hours a day when "need[ed.]" The mitigation is therefore not effective or enforceable.[15]

In the event of after-hours construction work, NOI-1b provides a short list of measures that "may" be imposed to reduce resultant noise impacts. (*Ibid.*) "These measures *may* include . . . restricting work to smaller time windows, condensing the overall duration of nighttime work to the degree feasible, and erecting temporary barriers to shield the short-term nighttime activity." (*Ibid.*) The first problem is that "smaller time windows" and "condensing the overall duration" are not performance standards, as required. As held in *King & Gardiner Farms, LLC v. County of Kern* (2020) 45 Cal.App.5th 814, 858, "[t]he terms 'increase' and 'reduce'— even though preceded by the mandatory term 'shall' and modified by the phrase 'to the extent feasible'— are not specific performance standards." The EIR provides no

[15] The EIR misrepresents that NOI-1b would prevent nighttime construction noise. (AR 1959 ["Implementation of CPHP Mitigation Measure NOI-1b would ensure that nighttime noise impacts from construction activities would be avoided"]; 1960 ["Because construction would be restricted by CPHP Mitigation Measure NOI-1b to only occur during daytime hours, health effects associated with the potential for nighttime awakenings would be avoided"].)

noise level threshold, measurement, or performance standard for after-hours work. Finally, there is no analysis of what the referenced "temporary barriers" would consist of or whether they would be effective to mitigate noise to an [unstated] standard. Ambient "nighttime noise levels should be 45 dBA or below, and short-term events should not generate noise in excess of 60 dBA." (AR 1937.) NOI-1b fails to address how after-hours work would relate to these levels and fails to impose any type of performance standard that would be used to enforce this mitigation measure.

Rather than prohibit construction outside of regular working hours to protect the health of neighbors, the adopted mitigation measure for noise is ineffective and impermissibly deferred without performance standards. The mitigation does not support a finding that the Project's construction noise would be less than significant. The EIR is inadequate on this issue and must be revised.

E. The EIR Fails to Lawfully Assess Impacts on Historic Buildings[16]

1. The EIR's Conclusion That It Is Infeasible to Avoid Demolishing Historically Significant Buildings, Including UC Hall, Is Based on Errors of Law and Is Not supported by Substantial Evidence

The Project proposes to demolish many buildings that it concedes are historically and culturally significant, are eligible for listing in the California Register of Historic Resources or are already so listed, and as to which the demolition represents a significant environmental impact. These buildings include UC Hall, Millberry Union, School of Dentistry, Langley Porter Psychiatric Institute, Aldea San Miguel Housing Buildings 8, 10, and 12, and Saunders Court. (AR 1738-49; 1755-56; 3890-3906; 3912-13; AR 6621-22; 238-243.)

The DEIR finds these significant impacts unavoidable because — according to UCSF — it is infeasible to continue to use these buildings. Just six years ago, however, UCSF's 2014 LRDP did not propose to demolish UC Hall, Millberry Union, School of Dentistry, Aldea San Miguel Housing Buildings 8, 10, and 12, and Saunders Court. Therefore, it was presumptively feasible to continue to use these buildings in 2014. In fact, the 2014 LRDP proposed to re-purpose UC Hall and Milberry Union for student housing (AR 13472; 13523-24); to renovate Saunders Court "to improve its functionality for general use and special events" (AR 13526); and to continue to use the School of Dentistry building (AR 13483; 13484-85) and Aldea housing buildings (AR 13520).

The record contains no evidence that anything has changed to make it infeasible to continue the 2014 LRDP's plans for one of more of these buildings rather than to demolish all of them. "[T]he deference provided to governing bodies with respect to land use planning decisions must be tempered by the presumption that the governing body adopted the mitigation measure in the first place only after due

[16] These issues are "exhausted" in comments at AR 6027-29; 6031-39; 888-89.

investigation and consideration." (*Napa Citizens*, *supra*, 91 Cal.App.4th at 359.) One of CEQA's core purposes is to avoid unnecessary environmental harm. The lead agency "may not . . . approve the project as proposed if there are feasible alternatives or mitigation measures that would avoid or substantially lessen the adverse environmental effects." (*Stockton Citizens for Sensible Planning v. City of Stockton* (2010) 48 Cal.4th 481, 498; see also *County of Fresno*, *supra,* 6 Cal.5th at 524-25 ["Even when a project's benefits outweigh its unmitigated effects, agencies are still required to implement all mitigation measures unless those measures are truly infeasible"]; *City of San Diego*, *supra*, 61 Cal.4th at 967; *Newhall Ranch I*, *supra*, 62 Cal.4th at 231 ["the lead agency must adopt feasible mitigation measures or project alternatives to reduce the effect to insignificance"].)

Mitigations or alternatives are not infeasible unless they make it impractical to proceed with the project. (*Citizens of Goleta Valley v. Board of Supervisors* (1988) 197 Cal.App.3d 1167, 1181 (*Goleta I*); *Uphold Our Heritage v. Town of Woodside* (2007) 147 Cal.App.4th 587, 599 (*Uphold Our Heritage*); *Preservation Action Council v. City of San Jose* (2006) 141 Cal.App.4th 1336 (*Preservation Action*) [city's finding that reduced-size alternative was infeasible due to competitive disadvantage was not supported by substantial evidence where record contained no data about competing stores].)

Here, neither the EIR nor UCSF's CEQA Findings present any evidence that it is infeasible to avoid demolishing each or any of these buildings. (AR 3878-3915; 238-43.) Given the contrast between the CPHP and the 2014 LRDP, this represents a significant omission of essential information and a failure to support an environmental conclusion with substantial evidence. (*County of Fresno*, *supra*, 6 Cal.5th at 527 [EIR must evaluate whether a mitigation measure is infeasible.].)

The FEIR's response to comments is also inadequate. The response and the Board's Findings say, in essence, that UCSF prefers to demolish all of these buildings so it is infeasible not to demolish them. (AR 6042; AR 238-42.) That preference does not equate to infeasibility. Neither the FEIR nor the Findings analyze ways to modernize the campus without demolishing every historically significant buildings. As the San Francisco Historic Preservation Commission commented, "the DEIR did not adequately consider alternatives that focused on the preservation of historic resources. Specifically, the DEIR did not analyze an alternative that retained just UC Hall, the building where the Zakheim murals are located, or just Toland Hall, the part of UC Hall where the Zakheim murals are located." (AR 5812.) This is an error of law because, as noted above, mitigation measures or alternatives are not infeasible unless they make it impractical to proceed with the project. (*City of Marina*, *supra*, 39 Cal.4th 341 at 368-69 ["CEQA does not authorize an agency to proceed with a project that will have significant, unmitigated effects on the environment, based simply on weighing of those effects against the project's benefits, unless the measures necessary to mitigate those effects are truly infeasible"].)

2. The DEIR Fails to Evaluate UCSF's Parnassus Campus as a Historic Resource or Historic District

The DEIR and the two *Carey & Company* reports upon which its analysis of historic buildings is based address one building at a time and fail to evaluate UCSF's Parnassus campus as a "historic resource" or "historic district" (defined in Public Resources Code section 5020.1, subdivisions (j) and (h), respectively) in its own right. (AR 1738-56; 3890-3913; 40072-130 [Carey 2011]; 40131-393 [Carey 2003].) Indeed, of the many "Form 523s" prepared for the many historic buildings on the campus and attached to the 2003 and 2011 Carey reports, not one describes the "Resource Present" as a "District" (AR 40106-121 [Carey 2003], including 40106 [UC Hall]; 40109; 40111 [Langley-Porter]; 40144; 40116; 40118; 40120]; 40131-40393 [Carey 2011], including 40283 [Aldea San Miguel 8]; 40287 [Aldea San Miguel 10]; 40291 [Aldea San Miguel 12]; 40295 [Ambulatory Care Center]; 40299 [Community Dental Clinic Building]; 40303 [Environmental Health and Safety (EH&S) Building]; 40305 [Faculty Alumni House]; 40309 [HSIR East]; 40313 [HSIR West]; 40317; 40319; 40351 [Milberry Student Union Building].)

Architectural historian Kara Brunzell explains this point:

> Preparers of the DEIR were clearly aware of the importance of looking at the campus as a whole. The document acknowledges districts as one of the important categories of historical resources . . . and divides the campus into six districts "based in part on existing land use patterns." ¶ An adequate cultural resources DEIR section would bring a similar intellectual rigor to the investigation of the potential historical significance of the campus as an entity in its own right, using a district (or districts) to organize the discussion of the built environment's significance. This would allow the cultural resources section to reflect the spatial and historical relationships between buildings, the street grid, open spaces, and other features of the site. . . . The attempt to evaluate each building individually without considering context, setting, or the site as whole means that the DEIR has not considered a potential historical resource: the Parnassus Heights Campus.

(AR 6037.)[17] CEQA requires that in preparing an EIR a lead agency must "use its best efforts to find out and disclose all that it reasonably can." (Guidelines, § 15144.) CEQA defines three categories of historic resources: mandatory, presumptive, and discretionary. (*Valley Advocates v. City of Fresno* (2008) 160 Cal.App.4th 1039, 1051 (*Valley Advocates*); § 21084.1; Guidelines, § 15064.5 (a).)

Mandatory historic resources are those "listed in, or determined to be eligible for listing in, the California Register of Historical Resources." (*Valley Advocates*, *supra*, 160 Cal.App.4th at 1051; § 21084.1, first sentence; Guidelines, § 15064.5 (a)(1).) Presumptive historical resources are those listed in a local historic register or identified as significant in a qualified historical resource survey. (*Valley Advocates*, *supra*, 160 Cal.App.4th at 1054; § 21084.1, third sentence; Guidelines, § 15064.5 (a)(2).)

[17] The EIR's analysis of visual impacts divides the campus into several "districts." (AR 1552; 3700.) It is inarguable that the site is more than a collection of unrelated buildings.

Lead agencies also have a mandatory duty to exercise their discretion to determine if a resource is historic. (Guidelines, § 15064.5(a)(3).) Discretionary historic resources are those a lead agency has discretion to designate even if not listed in a state or local register or identified in a qualified survey. (*Friends of Willow Glen Trestle v. City of San Jose* (2016) 2 Cal.App.5th 457, 467 ["final sentence of section 21084.1 clearly permits a lead agency to make a determination as to whether a resource that is neither deemed nor presumed to be a historical resource is nevertheless a historical resource for CEQA purposes"]; *Valley Advocates*, *supra*, 160 Cal.App.4th at 1059-60; § 21084.1, final sentence; Guidelines, §§ 15064.5(a)(3), (a)(4) .)

Lead agencies have a mandatory duty to exercise their discretion to determine if a resource is historic. (Guidelines, § 15064.5(a)(3) ["Generally, a resource shall be considered by the lead agency to be 'historically significant' if the resource meets the criteria for listing on the California Register of Historical Resources . . ."].) The word "shall" identifies "a mandatory element which all public agencies are required to follow." (Guidelines, § 15005 (a); see *Valley Advocates*, *supra*, 160 Cal.App.4th at 1060, 1063 ["a prejudicial abuse of discretion occurs when a public agency is misinformed regarding its discretionary authority and, as a result, does not actually choose whether to exercise that discretionary authority"].) Where, as here, the agency fails to exercise its discretionary authority to determine if a resource is a "discretionary" historic resource, the error is reviewed de novo as a failure to proceed in the manner required by law. (*Valley Advocates*, *supra*, 160 Cal.App.4th at 1063.)

UC failed to proceed in the manner required by law because it failed to exercise its discretion to determine if the campus as a whole is a "discretionary" historic resource. (§ 21084.1; Guidelines, § 15064.5 (a), citing §§ 5020.1 and 5024.1.) "'Historic district' means a definable unified geographic entity that possesses a significant concentration, linkage, or continuity of sites, buildings, structures, or objects united historically or aesthetically by plan or physical development." and "'Historical resource' includes, but is not limited to, any . . . area, which is historically . . . significant." (§§ 5020.1 (h), (j).) The EIR gives this no consideration.

The FEIR's response to comments (AR 6040-41) points to only two sentences in the DEIR or its supporting materials where the concept of a "historic district" is mentioned, as if this shows the concept was evaluated and rejected. It fails to reference any other information in the DEIR — because there is none — that explains why the DEIR or FEIR declined to evaluate the campus for qualification as a historic district. The response also refers to the new evaluation in FEIR Appendix HR (AR 6609-29) as if this provides the missing analysis. It does not. In fact, the new memorandum in Appendix HR says nothing about the campus as a "historic district" and never uses the word "district."

Instead, the response to comments offers an entirely new rationale for not evaluating the campus as a historic district: "Given the wide range of architectural styles and uses of the buildings, the long period of development (1917-2010), and a lack of overall thematic context or initial master plan guiding development from the beginning, it was determined that the campus as a whole did not constitute a historic district." (AR 6041.) This rationale is not in the DEIR; it is significant new information requiring recirculation of a revised Draft EIR for public and agency comment. A change in EIR reasoning supporting a significance conclusion warrants recirculation. (*Sutter Sensible Planning, Inc. v. Board of Supervisors* (1981) 122 Cal.App.3d 813, 817 (*Sutter*) [recirculation required because the FEIR provided 'a more elaborate discussion of ground water availability and the projected impact of the plant on the water table']; *Pesticide Action*, *supra*, 16 Cal.App.5th at 252 [recirculation required for new rationale for significance conclusion in FEIR].)

Also, the new evaluation in the FEIR's Appendix HR presents aerial photos/maps showing all historic resources that would be demolished or altered. (AR 6621-22.) This aerial photo/map is a revelation. The DEIR failed to provide a visual aid showing the radical transformation of the entire campus from the loss of many historically significant buildings. This omission prevented a reader of the DEIR — even a careful reader — from understanding the wide geographic scale and intensity of the transformation the CPHP proposes for the campus as a whole.

Thus, the EIR omits essential information regarding the environmental setting and fails to assess the CPHP's potentially significant effects on all potential historic resources in the affected environment.

F. The EIR Fails to Adequately Assess Impacts from Air Emissions[18]

1. The EIR Impermissibly Piecemeals the Project's Human Health Impacts from Toxic Air Contaminant Emissions

The EIR fails as an informational document by not disclosing the human health risk resulting from the Project's combined emissions of toxic air contaminants ("TAC"). The EIR acknowledges that the Project "would result in development that would generate operational emissions of TACs and result in localized contributions to PM2.5 concentrations from a variety of sources." (AR 1684.) The EIR also acknowledges that Project construction over 30 years would generate TAC emissions. (AR 1671.) While the EIR utilizes a significance threshold of ten increased cancer risks, its analysis of the Project's impacts against this standard is defective because it piecemeals various emission sources and thereby fails to identify the overall health risk resulting from the combined emissions from all Project emissions.

Specifically, the EIR concludes that the Project's construction emissions for the Irving Street Arrival, RAB, New Hospital, and Aldea Housing Densification would result in a combined 9.47

[18] The issues in this section were exhausted in public comments at AR 6069-6075; 890-896.

increased cancer risks (AR 5962-63), very close to the applicable significance standard of ten. (AR 1642.) UC keeps the health impact below the threshold by arbitrarily omitting key elements of the Project's TAC emissions. (AR 5964.) The expert retained by petitioner Parnassus Neighborhood Coalition ("PNC") explained that state guidance requires an overall health risk assessment to account for both construction and operational TAC emissions, stating in relevant part:

> According to OEHHA guidance, as referenced by the DEIR, "the excess cancer risk is calculated separately for each age grouping and then summed to yield cancer risk at the receptor location." However, the HRAs conducted in the DEIR fail to sum each age bin to evaluate the total cancer risk over the course of the Project's construction and operation, as is required by the guidance. This is incorrect and thus, an updated analysis should quantify the Project's construction and operational health risks and then sum them to compare to the BAAQMD threshold of 10 in one million, as referenced by the DEIR (p. 4.2-16).

(AR 5964.) The most significant sources for the omitted operational TAC emissions include mobile-source emissions and emissions from the New Hospital. The mobile-source TAC emissions omitted from the EIR's analysis are not insignificant, as PNC's expert further explains:

> [W]hile DEIR includes an HRA assessing the health risk impacts associated with the emergency generators associated with the operation of the RAB component of the Initial Phase of the Project, the DEIR fails to evaluate the health risk impacts resulting from the Project's entire operation. This is incorrect, as the DEIR indicates that the CPHP would result in 52,200 daily vehicle trips throughout operation, which will result in additional exhaust (p. 4.15-29, Table 4.15-7).

(*Ibid*., italics added.) TAC emissions from the New Hospital are also not insignificant. "Fume hood emissions also contribute to exposure to TACs." (AR 11049.) UC revealed in the 2014 LRDP EIR that "Risks associated with fume hood emissions were estimated at 4.46 in one million at the maximally exposed individual . . ." (AR 10936.)

The FEIR does not supply this missing analysis of mobile-source or Hospital TAC emissions nor provide any expert testimony demonstrating that California Office of Health Hazard Assessment ("OEHHA") does not require it. (AR 6012.) Instead, the FEIR relies upon the "plan-level" nature of its review as to these Project components to conclude that health risks from the New Hospital and future phase projects will undergo separate subsequent CEQA review. (*Ibid*.)

This is a legal error. First, the FEIR does not explain why it is too speculative to include these emission sources in the overall health risk as required by Guidelines section 15145. "The fact more precise information may be available during the next tier of environmental review does not excuse [an agency] from providing what information it reasonably can now." (*Cleveland II*, *supra*, 17 Cal.App.5th at 440; *San Joaquin Raptor II*, *supra*, 149 Cal.App.4th at 660 [EIR was required to analyze "an aspect of the Project itself, as well as a reasonably foreseeable use"].) Readily available information about the

Project's operational TAC emissions includes the acknowledged 28,800 daily vehicle trips, a major source of diesel particulate emissions (AR 4204), as well as the Project's increase in mobile-source diesel consumption by 505,297 gallons per year. (AR 1779.) Additionally, conservative estimates of the number of hood fumes required for the New Hospital are available. (AR 10936 ["At present, there are approximately 208 active fume hoods in operation at the Parnassus Heights campus site"].)

Thus, ample information regarding the Project's mobile-source and Hospital TAC emissions was available to estimate the Project's combined health risk. Either emission source alone, when added to the Project's acknowledged 9.47 increased cancer risks, would overcome the relevant significance standard of ten increased cancer risks. The addition of both emission sources together would put the Project's combined health risk well beyond that standard.

UC alternatively asserted in the FEIR that the health risks from the various components of the Project should not be measured against the project-level threshold of ten increased cancers, but rather the cumulative threshold of 100 increased cancers. (AR 6012-13.) This position ignores that these different aspects of the CPHP are nowhere else identified in the EIR as separate projects for purposes of CEQA. Indeed, nowhere does UC claim that these various construction activities have independent utility. In fact, the EIR combined the emissions from these various construction activities for purposes of assessing the Project's impact from criteria air emissions. (Compare AR 1658 [combining criteria air emissions for different construction activities] with 1679-1682 [dividing human health impacts according to construction activity].) UC's argument that the Project's various emission sources should be measured against a cumulative threshold constitutes impermissible piecemealing.

In short, the EIR fails as an informational document by piecemealing the Project's TAC emissions for purposes of minimizing the resulting health risk to nearby residents.

2. The EIR's Use of Thresholds of Significance for the CPHP's Cancer Risk Impact Is Based on Legal Errors and Not Supported by Substantial Evidence

The EIR errs by using thresholds of significance for both project-level and cumulative cancer risk that fail to take into consideration the severity of existing cancer risk conditions.

a. The EIR's Thresholds of Significance for Cancer Risk

The DEIR explains that "[a]s part of assessment of Initial Phase projects, a HRA [Health Risk Assessment] was conducted to provide quantitative estimates of health risks from exposures to TACs" and that the EIR "uses quantitative significance thresholds adopted by BAAQMD [Bay Area Air Quality Management District]." (AR 1650.)[19] For "project level" TAC related cancer risk, this threshold is

[19] The DEIR states: "These thresholds are based on substantial evidence identified in Appendix D

"exposing receptors to toxic air contaminant emissions that (1) result in a cancer risk greater than 10 cancer cases per 1 million people exposed in a lifetime . . ." (AR 1645.)[20] For "cumulative" TAC-related cancer risk, the EIR uses a threshold of 100 per one million, stating: "BAAQMD considers a cancer risk of 100 per one million or less to be within the "acceptable" range of cancer risk. (AR 1650.)

b. UC Failed to Adopt Its Cancer Risk Thresholds of Significance in a Public Rule-Making Process[21]

The EIR uses cancer risk thresholds of significance adopted by BAAQMD for general use without adapting them or how they are applied to reflect anything unique about this project or its environmental setting. CEQA requires that before UCSF uses such generalized thresholds of significance, it must adopt the thresholds by a public rule-making process, and must show in that process that the thresholds are supported by substantial evidence. (*Golden Door Properties, LLC v. County of San Diego* (2018) 27 Cal.App.5th 892, 903 (*Golden Door I*).) By failing to undertake this process, UCSF failed to proceed in the manner required by law.

c. The EIR Fails to Adequately Describe Existing Cancer Risk Conditions

The DEIR describes existing conditions (*i.e.*, baseline) for TAC-related cancer risk from ambient TAC concentrations as 248.3 cases per million. (AR 1636.) The DEIR describes the existing conditions for cancer risk from diesel particulates (DPM) as 480 in one million in the year 2000 in the Bay Area; and 520 in one million in the year 2012 statewide. (AR 1637.) The DEIR indicates that in 2000, the California Air Resources Board (CARB) approved a Diesel Risk Reduction Plan that it anticipated would result in an 80 percent decrease in statewide diesel health risk in 2020 compared with the diesel risk in 2000. The DEIR does not disclose what the statewide diesel risk was in 2000, so the reader cannot calculate what an 80% reduction would be in 2020. The DEIR also does not disclose what the statewide diesel risk is in 2020.

The EIR's description of the overall cancer risk is insufficient because the DPM baseline risk is not current as of the date of the Notice of Preparation of the EIR.[22] The FEIR responds to this comment by calculating this risk using projections CARB made in the year 2000 regarding reductions in DPM cancer risk that could be expected by the year 2020. The response provides, for the first time, an

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of the 2017 BAAQMD CEQA Guidelines and its 2009 Justification Report." (AR 1650 [DEIR 4.2-24].) The 2017 BAAQMD CEQA Guidelines is at AR 15672. Appendix D thereof is at 15832. The purported "justification" and "substantial evidence" for these thresholds is at AR 15860-15876.

[20] The DEIR also uses a threshold of "localized PM2.5 concentration exceeding 0.3 ìg/m3" (AR 1650.) The DEIR also establishes more general threshold of significance, as follows: "Expose sensitive receptors to substantial pollutant concentrations." (AR 1645.)

[21] This claim is exhausted at AR 896.

[22] This claim is exhausted at AR 6071.

estimate of the statewide diesel risk in 2000, which it uses to calculate a current basin wide cancer risk of 96 cases of cancer per 1 million people. (AR 6076.)

This response is too little, too late. It is an estimate based on 20 year-old projections, not a current analysis when the Notice of Preparation issued. (*South Coast*, *supra*, 48 Cal.4th at 327, citing Guidelines, § 15125 (a).) Also, the FEIR suggests the TAC and DPM risks are additive, stating: "Other toxic air contaminant emissions within the basin will further contribute to this estimated risk." (AR 6076.) Thus, baseline cancer risk from TAC and DPM may be 344 cases per one million people (*i.e.*, 248 cases per one million people for TAC plus 96 cases per 1 million for DPM). (AR 6076.) The omission of this information from the DEIR precludes informed public comment.

d. The DEIR's Assessment of the "Project-Level" Cancer Risk Impact Is Based on Legal Error and Not Supported by Substantial Evidence

The DEIR concludes that the Project's "project-level" or incremental increase in cancer risk is less than significant because the project would increase cancer risk by 9.8 new cases per one million people, which is below the DEIR's threshold of significance of any increase in risk over 10 cases per million. (AR 1671-84 [Impact AIR-3: Construction]; 1684- 89 [Impact AIR-4: Operations].) The DEIR borrows this threshold from BAAQMD's CEQA Guidelines and then deploys it without regard to the extreme baseline cancer risk in San Francisco. In doing so, the DEIR commits the fundamental error of failing to add the Project's effects to the baseline for purposes of determining significance because it applies the threshold without regard to the magnitude of the baseline cancer risk. Under CEQA, an EIR analyzes the environmental impacts of the proposed project on the environmental setting (or "baseline"). (*South Coast*, *supra*, 48 Cal.4th at 315; *San Joaquin Raptor I*, *supra*, 27 Cal.App.4th at 722-23; *Eel River*, *supra*, 108 Cal.App.4th at 881-82; Guidelines, §§ 15125 (a)(1), 15126.2 (a).)

The baseline cancer risk in San Francisco is 248 cases per million from TAC plus at least 96 cases per million from DPM. The DEIR's uncritical use of the ten cases per million BAAQMD threshold implies that an increase of less than ten cases per million is always less than significant, regardless of the baseline risk. This is a legal error, because the severity of existing conditions is always a factor in determining significance of project impacts. (*CBE v. Resources*, *supra*, 103 Cal.App.4th at 114 ["the guiding criterion on the subject of cumulative impact is whether any additional effect caused by the proposed project should be considered significant given the existing cumulative effect"]; *Kings County*, *supra*, 221 Cal.App.3d at 718.) The EIR's unevaluated assumption that an increase of less than ten cases per million is always less than significant is a policy judgment, not a finding of fact based on evidence. This violates CEQA because determinations of significance must be based on evidence. (*Amador Waterways*, *supra*, 116 Cal.App.4th at 1108-1109 ["thresholds cannot be used to determine

automatically whether a given effect will or will not be significant"].)

Moreover, while "the existence of substantial evidence supporting the agency's ultimate decision . . . is not relevant when one is assessing a violation of [CEQA's] information disclosure provisions,"[23] the EIR's use of this threshold is not supported by substantial evidence. Other than pointing to the BAAQMD threshold, the DEIR fails to explain why the Project's admitted incremental increase in cancer risk is not significant given that it is being added to a severe baseline cancer risk.

Instead, the FEIR's responses to comments states that "The 10.0 in one million cancer risk criterion. . . is also the level set by the Project Risk Requirement in the Air District's Regulation 2, Rule 5 new and modified stationary sources of TAC, which states that the Air Pollution Control Officer shall deny an Authority to Construct or Permit to Operate for any new or modified source of TACs if the project risk exceeds a cancer risk of 10.0 in one million." (AR 6077.) Neither the response to comments or the BAAQMD CEQA Guidelines (at AR 15866) explain why a threshold used in a different regulatory program to deny permission to operate a stationary source of TAC represents an appropriate threshold for determining significance under CEQA, where such a determination does not require denial of the project. Indeed, BAAQMD's Regulation 2, Rule 5 process for new and modified stationary sources of TAC may require the project to "implement Best Available Control Technology for Toxics (T-BACT), as determined by BAAQMD." (AR 15730.) According to BAAQMD, "Regulation 2-5 dictates that the cancer risk is acceptable if it is below one in a million, or if T-BACT is applied and the cancer risk is below 10 in a million." (AR 16163.) Thus, for UC to accurately use BAAQMD's Regulation 2-5 criterion for issuing stationary source permits as its threshold of significance, it would have to use the "one in a million" threshold instead of the "ten in a million" threshold because BAAQMD has not required that the CPHP implement T-BACT.[24]

e. The DEIR's Assessment of the Project's Cumulative Increased Cancer Risk Is Based on Legal Error and Not Supported by Substantial Evidence

The DEIR concludes that the Project's "cumulative" increase in cancer risk when considered in combination with other sources of risk is less than significant (AR 1695-97; 3846-48 [Impact C-AIR-2: Construction and Operation].) For cumulative increased risk, the DEIR uses a threshold of any exceedance of 100 cases per one million because "BAAQMD considers a cancer risk of 100 cases per one million or less to be within the 'acceptable' range of cancer risk." (AR 1650; 1653; 3800; 3803.)

Assuming arguendo that this is an appropriate threshold for assessing whether the Project's cumulative cancer risk impact is significant, the DEIR fails to apply it. After stating this threshold, the

[23] *Communities v. Richmond*, *supra*, 184 Cal.App.4th at 82.

[24] Also, as discussed in the next section, "acceptable" under CEQA is not the same as "significant."

DEIR changes it, stating: "Because the cumulative increase in cancer risk from all sources would be well below 100 in one million . . . the CPHP's cumulative impact to local health risk and hazards would be reduced to less than significant with identified mitigation." (AR 1696, 3847.)

Thus, instead of considering a post-project cumulative cancer risk above 100 cases per one million to be significant, the DEIR shifts to requiring that the cumulative "increase" in cancer risk contributed by the Project in combination with other projects exceed 100 cases per one million to be found significant. This shift reflects several legal errors.

First, the DEIR is confusing as to what the cumulative threshold is, which frustrates meaningful public comment. Therefore, the DEIR must be revised and recirculated using a clear and stable cumulative threshold.

Second, both thresholds, as described at AR 1650 and employed at AR 1696 for both construction and operation, suffer the same legal defect as the incremental standard: they are applied without regard to the baseline cancer risk. That risk in San Francisco is 248 cases per million from TAC plus at least 96 cases per million from DPM. According BAAQMD and the DEIR, this baseline risk is "unacceptable." The cumulative increase in cancer risk contributed by the Project in combination with other projects would make this existing "unacceptable" condition worse. The EIR fails to explain why the Project's admitted cumulative increase in cancer risk above an already unacceptable baseline level is not significant given that it is being added to a severe cancer baseline. (*CBE v. Resources*, *supra*, 103 Cal.App.4th at 114 ["the guiding criterion on the subject of cumulative impact is whether any additional effect caused by the proposed project should be considered significant given the existing cumulative effect"]; *Kings County*, *supra*, 221 Cal.App.3d at 718.)

This legal error is illustrated by a simple example. According to the DEIR, the threshold of a cumulative increase of 100 cases per million applies regardless of baseline risk. Thus, a project with a baseline cancer risk of 50 cases per million would need a post-project cancer risk of 150 cases per million for the cumulative impact to be deemed significant, while a project with a baseline cancer risk of 75 cases per million would need a post-project cancer risk of 175 cases per million for the cumulative impact to be deemed significant. Thus, a project with the higher baseline risk (75 per million) would not be deemed to have a significant cumulative impact with a post-project cancer risk of 150 cases per million, but a project with the lower baseline risk (50 per million) would be deemed to have a significant cumulative impact with a post-project cancer risk of 150 cases per million. In short, the widely repudiated "ratio theory" in which "the greater the overall problem, the less significance a project has in

a cumulative impacts analysis" is improperly embedded in the EIR's threshold of significance for the Project's cumulative cancer risk impact. (*Kings County*, *supra*, 221 Cal.App.3d at 721.)[25]

The Final EIR responds to comments regarding the invalidity of the EIR's use of the cumulative threshold by noting that the BAAQMD considers any cancer risk below 100 cases of cancer in one million people to be "acceptable" and cancer risk above 100 cases of cancer in one million people to be unacceptable. (AR 6082-83.) Thus, the EIR must explain why any CPHP-induced increase in cancer risk above the severe existing condition (which clearly exceeds 100 in one million) is not significant. The EIR fails to do so. This is a failure to proceed in the manner required by law.

The FEIR responds to the comment that the DEIR employs the TAC cancer risk thresholds in a manner that fails to account for the severity of existing baseline conditions by arguing that these thresholds are supported by "substantial evidence." (AR 6076-78.) This is not responsive to the comment that the EIR commits a procedural/informational error by "failing to add the Project's effects to the baseline for purposes of determining significance."

The FEIR's response to comments argues that because BAAQMD, San Francisco and other agencies agree that these thresholds are appropriate, this somehow provides "substantial evidence" supporting their use. (AR 6076-78.) The FEIR misconceives the task at hand, because the response is entirely abstract, untethered to the facts of this Project or its setting. (*Golden Door I*, *supra*, 27 Cal.App.5th at 903-905 ["the Efficiency Metric 'allows the threshold to be applied evenly to most project types,' but it does not account for variations between different types of development; nor does it explain why the per person limit would be appropriately evenly applied despite project differences. Without substantial evidence explaining why statewide GHG reduction levels would be properly used in this context, the County fails to comply with CEQA Guidelines"].)

CEQA neither requires nor allows the DEIR to use the BAAQMD's or EPA's judgment of "acceptable" cancer risk to determine the significance of the Project's impacts. (*Ebbetts Pass*, *supra*, 43 Cal.4th at 957 (error to conclude that compliance with pesticide restrictions precludes significant impact).) The EIR's reliance on the increase over 100 in one million threshold to determine cumulative significance improperly imports considerations of cost and feasibility of mitigation into a determination of significance, whereas CEQA requires that these determinations be made in distinct steps.[26] UC's discretion to decide that significant harm is "acceptable" in light of Project benefits arises at the end of

[25] The environmental justice implications of the DEIR's use of this threshold are dire.

[26] The EPA standard was designed to support a different regulatory scheme, not to support determinations of significance under CEQA. The EPA is permitted and required to consider factors of cost and feasibility in its regulation of toxics under the Clean Air Act.

the CEQA analysis, in a statement of overriding considerations, not at the beginning of the process, in determining whether impacts are significant. (*City of Marina*, *supra*, 39 Cal.4th 341 at 368-369.)

The FEIR argues that the 100 in one million cancer risk threshold is based on guidance developed by the United States EPA for "acceptable" risk. (AR 6077.) The response misrepresents actual EPA policy, which is to assess increased cancer risk based on a host of site-specific factors within a range of values from one in one million to 100 in one million. This policy reflects the agency's attempt to balance the costs and benefits of protecting public health in its implementation of a host of federal environmental laws, including the Clean Air Act, Clean Water Act, Resource Conservation and Recovery Act, CERCLA (Superfund), etc. (AR 898 [Starfield, L.E., "The 1990 National Contingency Plan: More Detail and More Structure, But Still a Balancing Act;" *Environmental Law Reporter*, June 1990].) Instead of following this analytic approach, the EIR selects one value at the least environmentally protective end of the EPA's "acceptable risk" range and uses it to determine the significance of the Project's impacts, but without regard to the Project's site-specific considerations.

The distinction is important, because where the impact does not exceed a threshold of significance erroneously inflated by the concept of "acceptable risk," UC is absolved of further legal obligation to mitigate the impact. As a result, the public cannot know whether UC would allow an unknown number of cancer cases to occur that it could have feasibly avoided had it scrupulously followed CEQA. Nor does the public know, had the EIR found the Project's additional cancer risk insignificant, whether UC would have found the Project's benefits outweigh its environmental and adverse human health effects. (*County of Fresno*, *supra*, 6 Cal.5th at 512 ["the EIR . . . is a document of accountability"].)

3. Additional Responses to a Comment Regarding the EIR's Method for Determining the Significance of Cumulative Cancer Risk are Inadequate

Commentors noted that the DEIR is confusing because it is unclear if it considers any resulting post-project cumulative cancer risk above 100 cases per one million to be a significant project impact, or if it requires that the cumulative "increase" in cancer risk contributed by the Project in combination with other projects exceed 100 cases per one million be found significant. (AR 6072-73.) The FEIR fails to respond to this comment or clarify how the threshold was applied.

The response also purports to find substantial evidence support for using these thresholds in the fact that BAAQMD developed its 100 in one million cumulative criterion because it is reflective of air quality in a 'pristine' portion of the Bay Area. (AR 6079.) It is difficult to see how this supports the EIR's use of the cumulative threshold to find this Project's cumulative cancer risk impacts to be less than significant. If the EIR uses the cumulative threshold to conclude that if the Project contributes to an

increase in cancer risk where total post-project cancer risk exceeds 100 cases of cancer per one million, then the fact that cancer risk in pristine areas is 100 in one million supports finding this Project's cumulative contribution to be "considerable" because it would increase cancer risk above the baseline cancer risk of at least 248 or 344 cases per one million people. Alternatively, if the EIR requires that the cumulative "increase" in cancer risk contributed by the Project in combination with other projects exceed 100 cases per one million to be found significant, then the fact that cancer risk in pristine areas is 100 in one million is irrelevant to the determination of significance.

The response to comments also refers to a 1,000-foot distance from sources of cancer risk. (AR 7078; 6080.) The response does not explain how this distance supports the EIR's application of its thresholds to this Project and its setting. If this distance limit is used to exclude the contribution of regionally or globally transported TACs to this Project's cumulative excess cancer risk, the EIR commits an error of law. Baseline risk cannot be arbitrarily reduced by this artifice. Also, the fact that pollutants from a particular source may attenuate with distance does not explain why the cumulative background cancer risk pollutants from all sources, including more distant sources, can be ignored in a cumulative analysis. CEQA requires consideration of all existing conditions in cumulative analysis. (*CBE v. Resources*, *supra*, 103 Cal.App.4th at 114; *Kings County*, *supra*, 221 Cal.App.3d at 718.)

G. The EIR's Visual Impacts Analysis Is Based on Errors of Law and Improperly Defers the Formulation of Mitigation Measures for Significant Visual Impacts[27]

1. The EIR's Analysis of Impacts AES-1 and AES-2 Omits Essential Information

The EIR divides its analysis of the CPHP's visual impacts into three types of impacts using three separate thresholds of significance: physical impacts on scenic vistas (AR 3719 [Impact AES-1]), "conflict with applicable zoning and other regulations governing scenic quality" (AR 3726 [Impact AES-2]), and "new sources of substantial light or glare which would adversely affect daytime or nighttime views" (AR 3741 [Impact AES-3].)

The EIR deploys these thresholds in a manner that excludes consideration of substantial evidence supporting a fair argument that visual impacts as perceived from surrounding neighborhoods may be significant. The EIR achieves this result by (1) artificially limiting its analysis of *physical* changes to the visual character of the area to impacts on scenic vistas (i.e., Impact AES-1) and (2) measuring the CPHP's conflict with applicable regulations governing visual impact against a legally erroneous baseline of future regulations.

[27] The issues in this section are exhausted at AR 5862-64; 5903-06; 5913-18; 6137-43.

Regarding Impact AES-2, the EIR identifies the "applicable regulations governing scenic quality" as UC's 2014 LRDP sub-objectives 1B and 1C, which provide, respectively, that the campus: "Acknowledge and respond to local zoning and height and bulk limitations to the extent possible" and "Design new buildings to be sensitive to the surrounding neighborhood and landscape, taking into account use, scale, potential noise generation, and density." (AR 3726.)

The EIR finds that the New Hospital, at 955,000 gross square feet, 16 stories tall, and 294 feet in height (AR 3668), would:

> contrast sharply both in height and scale with the existing residential development to the east, which is limited to 40 feet in height. The proposed New Hospital would also be nearly 100 feet taller than other existing buildings on the campus site (adjacent Moffitt Hospital is currently the tallest building at 197 feet). In addition, the proposed New Hospital would be a prominent newly visible feature in the viewsheds from nearby neighborhoods . . . . As such . . . the height and scale of the proposed New Hospital would be inconsistent with 2014 LRDP sub-objective 1C.

(AR 3731.) Having shown that the impact is significant, the EIR performs a neat trick by finding the impact less than significant because the CPHP would do away with the 2014 LRDP's regulations governing scenic quality with which it conflicts. The EIR states:

> To the extent the CPHP would be inconsistent with applicable 2014 LRDP objectives as described above, UCSF would seek amendments to the 2014 LRDP to bring the CPHP and 2014 LRDP into conformity. In particular, the 2014 LRDP would be amended clarify (sic) that sub-objectives 1B and 1C would not apply to the New Hospital project . . . ."

(AR 3737; see also AR 3727.) By this artifice, the EIR improperly considers the baseline to be the future project under the amended LRDP policy, rather than comparing the CPHP's environmental impact to current conditions. (*South Coast*, *supra*, 48 Cal.4th at 320-21; *Environmental Planning and Information Council v. County of El Dorado* (1982) 131 Cal.App.3d 350, 355.)

When this error is combined with the EIR's self-selected limitation on Impact AES-1 to only consider impacts on scenic vistas, the EIR commits the additional legal error of deploying its thresholds of significance to foreclose consideration of substantial evidence supporting a fair argument of significant impact. (*Ante*, *Visalia Retail*, *supra*, 20 Cal.App.5th at 13; *Amador Waterways*, *supra*, 116 Cal.App.4th at 1108–09.)

Here, a fair argument of significant impact is provided, not only by the EIR's analysis of Impact AES-2 (AR 3726-41), but by public comments from expert planners Terry Watt (AR 5903-06) and Jared Ikeda of Ikeda Consulting. (AR 5913-14). Mr. Ikeda opined that the proposed building under the CPHP, and particularly the sixteen-story New Hospital "would have significant visual impacts," providing visual simulations to show the extreme inconsistency with surrounding development. (AR 5913-14.) Mr. Ikeda described the New Hospital as the "dominant mass" in the neighborhood, that will "block views"

to Mount Sutro. (AR 5915.) He concluded that "the height and mass of the proposed new hospital will be highly visible as a new feature in the skyline from . . . public parks as well as from various other locations and streets within the surrounding neighborhoods." (AR 5917.) The New Hospital would also be visible from Golden Gate Park. (AR 5918.) Golden Gate Park is one block (400 feet) from campus. (AR 3644, 3699.)

In short, the EIR's analysis of Impacts AES-1 and AES-2 reveal a rabbit warren of legal errors that combine to omit an essential analysis of the CPHP's physical impacts on the area's visual quality as seen from the surrounding neighborhood, requiring revision of the DEIR.

2. UC Erroneously Claims That It Is Exempt from Considering Visual Impacts Pursuant to Public Resources Code Section 21099

The EIR claims, based on section 21099 subdivision (d), that it need not analyze visual impacts and that the analysis that is provided is solely for informational purposes. (AR 3715-16; 3691-92; 5766.) That is incorrect. The CPHP does not qualify for exemption from CEQA's requirements to assess visual impacts. "The scope of an exemption may be analyzed as a question of statutory interpretation and thus subject to independent review." (*Covina Residents for Responsible Development v. City of Covina* (2018) 21 Cal.App.5th 712, 724.) Courts review exemptions narrowly. (*San Lorenzo Valley Community Advocates for Responsible Education v. San Lorenzo Valley Unified School Dist.* (2006) 139 Cal.App. 4th 1356, 1382; *Mountain Lion Foundation v. Fish and Game Commission* (1997) 16 Cal.4th 105, 125 (*Mountain Lion Foundation*.)

Section 21099, subdivision (d)(1) states that "[a]esthetic and parking impacts of a residential, mixed use-residential, or employment center project on an infill site located within a transit priority area shall not be considered significant impacts on the environment." The EIR contends the CPHP "substantially meets the definition of an employment center as the campus site includes a variety of commercial uses." (AR 3692.) But the exemption narrowly defines an "employment center project" as "a project located on property zoned for commercial uses." (§ 21099 (a)(1).) To the extent the campus has any zoning classification, it is partially zoned by the City as "(Public) Zoning District" and "Residential House District, Two-Family (RH-2)." (AR 4082.) It is not zoned for "commercial use."

In responses to comments, the FEIR argues that pursuant to its "constitutional autonomy, development and uses on property owned or leased by the University that are in furtherance of the University's educational purposes are not subject to local land use regulation, including those of the City of San Francisco." (AR 5765.) Assuming this is true, it is not relevant to whether the campus meets the statutory requirement of being zoned for commercial uses. It is either zoned for "(Public) Zoning

District" and "Residential House District, Two-Family (RH-2)" or it is not zoned at all.[28]

The FEIR also presents a new argument that the CPHP is a "residential" or "mixed-use residential" project because it "proposes substantial new on-campus housing, consisting of 772 net new housing units." (AR 5765-66.) These characterizations are incorrect as a matter of law. While section 21099 does not define "residential" or "mixed-use residential" projects, another closely-related section of CEQA does. Section 21159.28 subdivision (d) defines a "residential or mixed-use residential project" as one "where at least 75 percent of the total building square footage . . . consists of residential use or a . . . transit priority project as defined in Section 21155." "Transit priority projects" are defined as containing "at least 50 percent residential use, based on total building square footage." (§ 21155.)

The CPHP proposes 915,300 square feet of housing out of total proposed development of over five million square feet. (AR 3684.) Thus, housing represents less than 20% of the CPHP development footprint, not nearly enough to qualify it as a "residential" or "mixed-use residential" project under CEQA's limited exemptions for housing projects. (*Berkeley Hillside Preservation v. City of Berkeley* (2015) 60 Cal.4th 1086, 1099-1100 ["statutes must be read in the context of "the entire scheme of law of which it is part so that the whole may be harmonized and retain effectiveness"].)

The CPHP is not within the scope of section 21099 and requires EIR analysis of visual impacts.

H. The EIR Improperly Defers the Formulation of Mitigation Measures for Significant Biological and Visual Impacts

In its analysis of biological Impact BIO-2, the EIR finds significant wildlife impacts from increased bird strikes due to light and glare associated with higher buildings, particularly the New Hospital adjacent to the Mount Sutro Reserve; and that the adoption of Mitigation Measure BIO-2b (MM BIO-2b) would reduce this impact to less than significant. (AR 3870-71.) In its analysis of aesthetic Impact AES-3, the EIR finds the CPHP would create new sources of substantial light or glare which would significantly and adversely affect daytime or nighttime views in the area, and that the adoption of Mitigation Measure AES-3 (MM AES-3) would reduce this impact to less than significant.

Both MM BIO-2b and MM AES-3 improperly defer the formulation of specific mitigation measures until after project approval. MM BIO-2b provides:

> ***Minimize*** light and glare resulting from new buildings through the orientation of the building, use of landscaping materials and choice of primary façade materials. Design standards and guidelines to minimize light and glare shall be adopted for the new buildings, including: reflective metal walls and mirrored glass walls shall not be used as primary building materials for facades.

(AR 3871.) As biologist Dr. Shawn Smallwood stated in his comments on the DEIR, the proposed

[28] UC does not dispute that it must comply with CEQA before approving the CPHP.

mitigation does not reduce the impact to a less-than-significant level, the choice of materials has been deferred, and the measure does not establish "performance standards." (AR 5938-39; 5868-69.) The "design standards and guidelines to minimize light and glare" are also deferred and are not linked to any performance standards.

MM AES-3 provides:

> Light and glare from buildings ***shall be minimized*** through the orientation of the building, use of landscaping materials and choice of primary facade materials. Design standards and ***guidelines to minimize light and glare shall be adopted*** for new buildings, including:
>
> - Reflective metal walls and mirrored glass walls shall not be used as ***primary*** building materials for facades.
> - Installation of illuminated building signage ***shall strive*** to be consistent with UCSF design guidelines and/or City Planning Code sign standards for illumination. . ..
> - Design parking structure lighting to ***minimize*** off-site glare.

(AR 3742) This measure improperly defers the formulation of actual mitigations because it does not establish performance standards against which future planners or the public can judge whether the impact is reduced to less than significant. The terms "minimize," "primary," and "strive" are too vague to be enforceable. (See case law discussion *ante*).

I. The EIR Fails to Assess the Project's Shadow Impacts on Surrounding Neighborhoods

Shadow impacts from the huge CPHP buildings are of major concern. UC prejudicially abused its discretion because the EIR was required, but failed, to analyze the impact of new shadows on the surrounding neighborhood. The EIR restricted its analysis of new shadows to three city parks; to wit, Golden Gate, Richard Gamble Memorial, and Gratton. (AR 1597-1624; 3759, 3771.) The FEIR's Master Response concedes that new shadow is considered significant only if it "substantially and adversely affect[s] the use and enjoyment of publicly accessible open spaces. (AR 5779.) Commentors objected to the Draft EIR's failure to analyze the significance of new shadows on surrounding neighborhoods, including those created by the proposed 16-story New Hospital. Comments presented substantial evidence supporting a fair argument that such new shadows may have significant impacts. (AR 5775; 5864; 5906; 5917-18; 6311, 6313, 6401, 6443, 6509-10.)[29]

[29] "As currently envisioned, the proposed New Hospital would be 16 stories and up to 294 feet in height. Although the building has not yet been designed, the 16-story building would exceed the City's height limits for the portions of the project site within the 65-D and 220-F Height and Bulk Districts. As for any portion of the New Hospital that would be located within the Open Space Height and Bulk District, although General Plan policies discourage the placement of buildings or additions within this district." (AR 4091.) UC is "exempt from local zoning whenever using property under its control in furtherance of its educational mission." (*Ibid*.)

Planner Jared Ikeda commented on the lack of analysis of shadow impacts on public places outside of parklands. (AR 5863, 5912, 5917-18.) Based on the DEIR's Shadow Study Appendix (AR 3749-63.), Mr. Ikeda observed that the increased height of the proposed New Hospital, Milberry Terrace, and Irving Street Gateway projects "will further increase the time and frequency" of shadows cast throughout the year on public sidewalks and streets along Parnassus Avenue and Irving Street frequented by pedestrians. (AR 5917.) Mr. Ikeda also observed that shadows "affect the direct exposure to sun radiation and the resulting feeling of warmth to a person's body;" that "sun radiation can affect the temperature of a surface struck by sunlight and increase that temperature and its surroundings;" and that "[t]he comfort and attractiveness of these particular areas to pedestrians and passersby may be adversely affected and should be addressed in the EIR." (AR 5917.)

The EIR's refusal to analyze the significance of shadow impacts on neighborhood life outside of city parks, when presented with substantial evidence supporting a fair argument that such impacts may be significant, renders it inadequate. (See *ante*.) The EIR cannot use a self-selected threshold of significance to ignore a fair argument of significant impact. (*Amador Waterways*, *supra*, 116 Cal.App.4th at 1109 ["a threshold of significance cannot be applied in a way that would foreclose the consideration of other substantial evidence tending to show the environmental effect to which the threshold relates might be significant."].)

The FEIR's response to comments also summarizes what the DEIR's shadow study shows regarding the timing and extent of new shadows. (AR 5779 [2nd full ¶].) But, like the DEIR, the FEIR fails to determine the significance of this impact. (*Amador Waterways*, *supra*, 116 Cal.App.4th at 1111-12 ["The question the Agency had to answer was whether the reduction of the surface flow in the streams constituted a significant environmental effect."].)

The CPHP EIR failed to adequately address shadow impacts, in multiple respects.

J. The EIR Improperly Deferred the Formulation of Mitigation for Significant Wind Impacts[30]

The New Hospital, sixteen stories tall and over 294 feet high, would be the tallest building in the vicinity of the Parnassus campus. (AR 3731, 3668.) The EIR concludes that wind is already "uncomfortable" on Parnassus Avenue near the existing Moffitt-Long Hospital and Medical Building 1: "Winds that approach the campus from the southwest through the northwest tend to be accelerated as they flow between Mount Sutro and the taller campus buildings along the south side of Parnassus Avenue, as well as along Parnassus Avenue between taller campus buildings to either side of the street." (AR 3708.) The EIR concluded that wind impacts in the vicinity of the proposed New Hospital and

[30] This issue was exhausted in public comments at AR 1014-1016; 1021-1112.

other buildings would exceed the comfort criterion for pedestrians and would be "significant and unavoidable with mitigation." (AR 3743-46.)

The EIR identifies (and the Findings adopt) Mitigation Measure AES-4 to reduce the significant impact. However, MM AES-4 defers the formulation of specific mitigation measures to future analyses when specific building designs become available:

> CPHP Mitigation Measure AES-4 would require that wind-tunnel testing of specific building designs for structures 80 feet tall or greater be implemented to reduce wind impacts as feasible. However, in the absence of wind tunnel testing of specific building designs, it cannot be concluded that effects would be reduced to a less than significant level. Therefore, this impact would be significant and unavoidable with mitigation.

(AR 3744; see also 145-146, 3743, 4092.)

As discussed, to defer mitigation until after project approval it must be impracticable to achieve in the present and the agency must adopt performance standards. UC violates both criteria for deferral.

1. The EIR's Implied Finding That It Is Impractical to Formulate Specific Mitigation Measures Before Approval Is Not Supported by Substantial Evidence

The EIR states that wind impacts require computational analysis, which it includes, and an "individual point-based analysis undertaken in a wind tunnel," which it asserts cannot occur without final building designs:

> The computational analysis provides information regarding wind flows over the entire site, unlike the individual point-based analysis undertaken in a wind tunnel, and thus is able to reliably predict wind comfort conditions across a relatively wide area, such as the Parnassus Heights campus site. Computational wind engineering does not, however, account for turbulence (variation in wind speed and direction) in the same manner as does wind-tunnel testing, which is more appropriate for evaluation of actual specific designs of tall buildings. Moreover, computational analysis cannot identify exceedances of the wind hazard criterion due to its inability to reliably simulate turbulence using currently accepted methods.

(AR 3717.) On such basis, the EIR defers final analysis of the significance of wind impacts caused by the New Hospital, the Irving Street Arrival, Research and Academic Building ("RAB") and the Initial Aldea Housing Densification. (AR 3774, 3745.) It also defers the formulation of specific mitigation measures for those buildings until final designs are completed and subjected to wind-tunnel testing. (AR 3744, 3746.) The FEIR comment response is that "precise evaluation of a building's wind effects can only be undertaken in a wind-tunnel analysis, and because such an analysis provides useful information only when an actual specific building design is evaluated, *it is not possible* to provide more detail regarding potential wind impacts and potential mitigation measures . . . (AR 5773, italics added.)

Assuming, *arguendo*, that the absence of final designs precludes final wind-tunnel testing, the FEIR fails to explain or provide substantial evidence that it is impractical to complete final designs

before approval of the CPHP and to conduct the necessary wind tunnel testing to enable this EIR to analyze wind impacts and evaluate mitigations or alternative designs *before approval*.[31]

Moreover, relevant EIR evidence points in the opposite direction. The approximate mass and size of the buildings, including the New Hospital, are already known and modeled. (AR 3663.)[32] UC designed the New Hospital during the preparation of the EIR and consideration of the CPHP, noting that "sufficient detail will be available to publish a project-level Draft EIR for the New Hospital in the summer of 2021." (AR 3585.) An architectural firm prepared the CPHP and produced a visual rendering of the new buildings, after which UC hired another architect for the New Hospital in July 2020. (AR 1133; 1137-43; 1154-59.)[33] There is no substantial evidence that it would be impractical to complete building designs and conduct wind tunnel testing before EIR certification and project approval. UC's deferral of formulation of specific mitigation measures was a prejudicial abuse of discretion.

2. UC's Mitigation Fails to Require Compliance with Specific Performance Standards

MM AES-4 identifies a specific performance criterion: new exceedance(s) of the City's 26-mph pedestrian wind hazard criterion, *but it does not require that it be met*. (AR 3744.) UC merely promises that "UCSF shall work with the wind consultant to identify feasible mitigation strategies, including design changes (e.g., setbacks, rounded/chamfered building corners, stepped facades, etc.), to eliminate or reduce wind hazards to the maximum feasible extent." (AR 3744.) It does not set a performance standard by which these mitigation measures would be measured nor commit UCSF to a course of action. This does not satisfy the mandates of CEQA. (*Ante*; Guidelines, § 15126.4 (a)(1)(B).)

The error is prejudicial because UC finds the CPHP's future wind impacts to be "significant and unavoidable." (AR 144-47.) This finding requires that UC impose feasible mitigation measures that would substantially reduce the impact or reduce it to less than significant. (§ 21081 (a)(3); Guidelines, § 15091 (a)(3).) UC chose to defer design-specific analysis of wind impacts until after approval, and thus it is also its choice that no mitigation measure is ready to approve.

Also, UC's refusal to conduct design-specific analysis before approval means that its statement of overriding considerations based on Project benefits outweighing significant environmental effects

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[31] "Where there are impacts that cannot be alleviated without imposing an alternative design, their implications and the reasons why the project is being proposed, notwithstanding their effect, should be described." (Guidelines, § 15126.2(c).)

[32] "The preliminary concept for the New Hospital consists of a 5-story podium, above which an 11-story tower would rise." (AR 3668.)

[33] SF submitted additional detailed literature regarding specific design features to reduce pedestrian wind impacts, including the use of building features, massing, rounded corners, orientation of building in relation to wind, and consideration of terrain, and including information about how "podium designs" affect wind. (AR 1021-1112; 1095-1098; 1105-1111.)

was adopted without adequate basis, because neither UC nor the public know the severity of the significant effect. (*County of Fresno*, *supra*, 6 Cal.5th at 519 ["a sufficient discussion of significant impacts requires not merely a determination of whether an impact is significant, but some effort to explain the nature and magnitude of the impact"].)

Finally, MM AES-4 requires the use of an incorrect baseline to determine the success of the mitigations. The mitigation requires comparison of the "wind hazard exceedance or the number of test points subject to hazardous winds, compared to then-existing conditions . . . ." (AR 3744.) The proper baseline is the present, not future environmental conditions. (*South Coast*, *supra*, 48 Cal.4th at 320-321.)

K. The EIR Fails to Lawfully Analyze and Mitigate GHG Emissions

Implementation of the CPHP would increase electricity consumption at the Parnassus Heights campus by 116 percent, natural gas would be increased by 61 percent, diesel would be increased by 71 percent, and gasoline would be increased by 22 percent. (AR 1779.) These drastic increases in energy consumption would, in turn, significantly increase GHG emissions at the Parnassus campus. The EIR's analysis and mitigation for these GHG emission violates CEQA. UC's strategy to primarily rely on purchasing voluntary market offsets results in both unenforceable and improperly deferred mitigation. UC also improperly relies on the inapplicable 2017 Scoping Plan to establish a significance standard.

1. The EIR Relies on Unenforceable Mitigation

CEQA requires a lead agency to consider the "extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions[.]" (Guidelines, § 15064.4 (b)(3).) One of the EIR's significance criteria for GHG emissions is whether the CPHP would "generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment." (AR 1851.) The DEIR stated that the criterion would be potentially surpassed, because "the CPHP would result in a significant impact on the environment if GHG emissions from construction and operations of the Parnassus Heights campus site would exceed a threshold of zero net additional GHG emissions compared to the existing conditions, currently estimated below to be 125,426 MT CO2e annually for all Scope 1, Scope 2, and Scope 3 sources[.]" (AR 1852.)

To decrease the GHG emissions to less than significant (i.e., less than net-zero), the EIR relies on Mitigation GHG-1c. (AR 1855.) GHG-1c is divided into two parts, "Compliance with CARB's Cap and Trade Program" and "Compliance with UC Policy." (AR 1858.) There are two critical distinctions between the parts. Compliance with CARB's cap and trade program requires offset credits to be registered and retired by an Offset Project Registry pursuant to 17 California Code of Regulations section 95802 subdivision (a). However, these offsets may only be applied to UCSF's Central Utility

Plant ("CUP") because it is the only aspect of the CPHP that is a "Covered Entity" (AR 1834) – and then only up to a maximum of eight percent of UC's cap and trade program compliance obligation (AR 6128.) For the remainder of its compliance obligation, UC proposes to "utilize *the voluntary carbon market* to offset the remainder of the emissions from the CPHP that are above the project significance criterion." (AR 6128, italics added; 1858.)

The EIR concedes the eight percent maximum decrease under the cap-and-trade program is insufficient to meet its net-zero increase standard. (AR 1854.) In 2018, UCSF Parnassus produced 125,426 MT CO_2e of emissions. (*Ibid*.) Implementing the CPHP would increase emissions to 187,241 MT CO_2e, which is an increase of 61,815 MT CO_2e. (*Ibid*.) An eight percent decrease from the CUP would be insufficient to cover this increase and so, to avoid a significant impact determination, UC relies on the purchase of offsets *in a voluntary market* for all other CPHP emissions (equal to roughly 59,000 MT CO_2e a year). (AR 1855.)

The legal problem, however, is that these voluntary market offsets do not meet the same enforceability standard as CARB's cap and trade program (i.e., "real, permanent, verifiable, additional, and enforceable") and, therefore, are not "fully enforceable through permit conditions, agreements, or other legally binding instruments" as required by CEQA. (Guidelines, § 15126.4 (a)(2); see *Golden Door II*, *supra*, 50 Cal.App.5th at 506-514 [offset-based GHG mitigation violated CEQA because unenforceable].) In *Golden Door II,* as here, the agency's proposed offsets did not meet the protocols of the CARB cap-and-trade program designed to ensure that they are "real, permanent, verifiable, additional, and enforceable." (*Id*., *supra*, 50 Cal.App.5th at 511.) The CPHP's mitigation here, M-GHG-1c, uses nearly identical language as the mitigation in *Golden Door II*. (Compare AR 1859 to 50 Cal.App.5th at 511.) *Golden Door II* held that voluntary market offsets did not meet CEQA's enforceability requirement for mitigation because "M-GHG- does not require the protocol itself to be consistent with CARB requirements." (*Golden Door II*, *supra*, 50 Cal.App.5th at 506, 512.) The same is true here. (AR 1859 ["The protocols of each registry . . . shall be used"].)

2. The EIR Impermissibly Defers Mitigation for GHG Emissions

As discussed above, "Deferred mitigation violates CEQA if it lacks performance standards to ensure the mitigation goal will be achieved." (*Golden Door II*, *supra*, 50 Cal.App.5th at 520; Guidelines, § 15126.4 (a)(1)(B).) In *Golden Door II*, the court found the relevant offset mitigation impermissibly deferred because the county's planning and development director determined whether to approve offsets, without applying objective criteria. (*Golden Door II*, *supra*, 50 Cal.App.5th at 519.) UC's mitigation strategy is analogous and therefore dictates the same outcome here. *Golden Door II* determined that "M-GHG-1 sets a generalized goal — no net increase or net zero GHG emissions . . .

achieving that goal depends on implementing undefined offset protocols, occurring in unspecified locations (including foreign countries), the specifics of which are deferred to those meeting one person's subjective satisfaction." (*Id*., *supra*, 50 Cal.App.5th at 520.) The only differences here are that (1) UC limits offsets to unspecified locations within the United States and (2) instead of a single person's subjective satisfaction it is UC's unspecified "internal guidelines" and "internal screens" that must be satisfied. (AR 1858.) Neither difference compels a different outcome.

With respect to the location of offsets, *Golden Door II* held that M-GHG-1 did not contain objective standards as to whether any specific offset project would be "available" or "financially feasible" in one location or another. (*Golden Door II*, *supra*, 50 Cal.App.5th at 520-21.) UC follows the same approach here by allowing a large portion of CPHP emissions to be "mitigated" by purchasing offsets. (AR 1854.) Rather than determine the locations and protocols of these offsets at the time of the EIR, UC has deferred these determinations.

Further, *Golden Door II* found the agency's criteria for determining whether an offset would be "real, permanent, verifiable and enforceable," was not sufficiently objective. (*Golden Door II*, *supra*, 50 Cal.App.5th at 521.) UC's mitigation also lacks the objective criteria, as the "protocols of each registry, and *UC own internal screens*, shall be used to demonstrate that the carbon offset credits provided are real, permanent, additional, and have been independently verified as adhering to its applicable project protocols." (AR 1859, italics added.) The EIR provides no information about what these "internal screens" are, who is responsible for defining them, or whether the screens would provide offsets that are real, permanent, additional, and independently verified. (*Ibid*.) Without additional information, decision-makers and the public are left in the dark as to whether GHG-1c contains adequate, or any, performance standards. As in *Golden Door II*, GHG-1c is impermissibly deferred.

3. CARB's 2017 Scoping Plan Is Inapplicable by Its Own Terms to UC and Cannot Be Used to Reduce UC's Duty to Mitigate GHG Impacts

One of the EIR's thresholds of significance for GHG emissions asks: "Would implementation of the CPHP . . . Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases." (AR 1851.) In 2017, UCSF developed a combined Climate Action Plan and GHG Reduction Strategy ("GHGRS") "to provide streamlined analysis under CEQA for future development projects" (AR 1845-46) and to ensure that UCSF can answer 'no' to the above-stated questions (AR 1851). The GHGRS is also intended to ensure that UCSF is consistent with the state's GHG emission reduction targets for 2030 and 2050. (AR 1846; 1851.) Through legislation and executive orders, California has set the following emissions targets: by 2030, reduce GHG missions to 40 percent below 1990 levels; and by 2050, reduce GHG emissions to 80 percent below 1990 levels.

(AR 1830-31.) (See e.g., (*Cleveland I;* 3 Cal.5th at 428; *Newhall Ranch I*, *supra*, 62 Cal.4th at 221; *Spring Valley Lake*, *supra*, 248 Cal.App.4th at 101; *Sierra Club v. County of San Diego* (2014) 231 Cal.App.4th 1152, 1168; *Citizens for Responsible Equitable Environmental Development v. City of Chula Vista* (2011) 197 Cal.App.4th 327, 335-36.)

The EIR, however, in selecting the standard for determining whether its "conflict with applicable plan" threshold is triggered, abandons UCSF's own "applicable" GHGRS and instead uses the "inapplicable" CARB 2017 Scoping Plan Update, which guides cities and counties to use a "zero net increase" significance standard for GHG emissions. (AR 1852, 26981.) But UCSF is not a city or county, and so the CARB 2017 Scoping Plan guidance is inapplicable by its own terms, and the EIR fails to substantively explain how such guidance is applicable to a statewide entity like UC. As the EIR explains, "UCSF is a constitutionally created state entity," and therefore not a city, county or local government. (AR 1741.) As such, guidance to cities and counties regarding review and approval of private development projects within their respective jurisdictions simply has no application to UC's management of its own development proposals on its own property, over which UC has plenary authority.

In short, the EIR says it will use "conflict with an applicable plan, policy, or regulation" as a threshold of significance, but then selects a patently inapplicable plan to use in the analysis. This is a legal error. Further, this error is prejudicial because using a "net zero" significance standard reduces UC's mitigation obligation as compared to using a significance standard tied to the state's 2030 and 2050 GHG reduction goals.

L. The EIR Fails to Adequately Assess Whether Significant Increases in Energy Consumption are Wasteful, Inefficient or Unnecessary

1. UC May Not Uncritical Rely on Title 24 and LEED Certification

The CEQA Guidelines require lead agencies to prepare a substantive analysis of a project's energy impacts and provides in relevant part:

> Energy Impacts. If analysis of the project's energy use reveals that the project may result in significant environmental effects due to *wasteful, inefficient, or unnecessary use of energy, or wasteful use of energy resources, the EIR shall mitigate that energy use*. This analysis should include the project's energy use for all project phases and components, including transportation-related energy, during construction and operation. *In addition to building code compliance, other relevant considerations may include, among others, the project's size, location, orientation, equipment use and any renewable energy features* that could be incorporated into the project.

(Guidelines, § 15126.2 (b), italics added.)

An EIR must affirmatively analyze a project's use and efficiency to determine whether there is "wasteful, inefficient, or unnecessary use of energy." Here, the EIR's perfunctory analysis of energy

falls well short of these mandates. There are two interrelated but distinct defects in the EIR's analysis of energy impacts. First, the EIR disregards Appendix F energy conservation factors. Second, the analysis relies heavily on compliance with Title 24 and LEED standards but otherwise fails to consider other relevant considerations of Guidelines section 15126.2, subdivision (b).

The EIR purports to analyze the considerations set forth in CEQA Guidelines, Appendix F, yet completely overlooks the introduction of Appendix F, which states:

> The goal of conserving energy implies the wise and efficient use of energy. The means of achieving this goal include:
> a. decreasing overall per capita energy consumption,
> b. decreasing reliance on fossil fuels such as coal, natural gas and oil, and
> c. increasing reliance on renewable energy resources.

(Guidelines, Appendix F.)

The EIR makes no effort to demonstrate that the CPHP employs these specifically-identified "means" to achieve the stated goal of conserving energy. The most glaring conflict comes from a paragraph titled "Appendix F.II.C.1: Energy Requirements and Energy Use Efficiencies" of the EIR, which points the reader to Tables 4.5-2 and 4.5-3 for estimated energy usage. (AR 1779.) Table 4.5-2 discloses that electricity use would increase from 5,091 to 10,976 MWh/year, natural gas use would increase from 1,044,485 to 1,686,549 MMBtu/year, diesel use would increase from 681,823 to 1,198,763 gallons per year, and even gasoline use would increase from 4,246,449 to 5,178,022 gallons per year. (*Ibid*.) These numbers translate to a 116 percent increase in electricity use, 61 percent increase in natural gas use, 76 percent increase in diesel use and 22 percent increase in gasoline use. (*Ibid*.)

With respect to the three different "means" of achieving energy conservation, the EIR discloses that UCSF would dramatically increase its reliance on fossil fuels rather than "decreasing reliance." Further, the EIR's energy chapter does not break down energy use per capita so there is no evidence whether this is met. Last, the EIR is unclear whether renewable energy sources would be implemented into the CPHP, and this is particularly troublesome given "[t]he CUP currently supplies a substantial majority (98 percent) of the electricity service to the Parnassus Heights campus site by means of gas and steam turbine generators." (AR 1767.) Therefore, there is no indication that any of the identified means to achieve the goal of energy conservation are being met other than through reliance on compliance with Title 24 and LEED standards.

Though the EIR provides energy consumption data, the dramatic increases easily overcome the low threshold of whether the Project "may" result in wasteful, inefficient, or unnecessary use of energy, or wasteful use of energy resources. (Guidelines, § 15126.2 (b).) Put simply, the Project's proposed

increases in energy consumption imposes upon UC the duty to analyze in the EIR whether such consumption is "wasteful, inefficient or unnecessary." The EIR fails at this task.

The EIR's determination that energy impacts would be less than significant is based entirely on the Project's compliance with UC's Sustainable Practices Policy provisions "that are designed to conserve and reduce energy consumption," which in turn are premised on Title 24 and LEED compliance. (AR 1774, 1777.) However, both the CEQA Guidelines and applicable case law require more. Guidelines section 15126.2, subdivision (b) expressly requires, "In addition to building code compliance, other relevant considerations may include, among others, the project's size, location, orientation, equipment use and any renewable energy features that could be incorporated into the project." In *CCEC*, *supra*, 225 Cal.App.4th at 211, the court determined that requiring "compliance with Title 24 of the California Code of Regulations and other California green building codes did not meet the requirements of appendix F of the CEQA Guidelines." The court explains that such compliance

> . . . does not address many of the considerations required under appendix F of the CEQA Guidelines. These considerations include whether a building should be constructed at all, how large it should be, where it should be located, whether it should incorporate renewable energy resources, or anything else external to the building's envelope. Here, a requirement that [the project] comply with the Building Code does not, by itself, constitute an adequate assessment of mitigation measures that can be taken to address the energy impacts during construction and operation of the project.

(*Ibid*.) In *Ukiah Citizens for Safety First v. City of Ukiah* (2016) 248 Cal.App.4th 256, 265, the court relied on the *CCEC* court's analysis to conclude that the respondent city's EIR "improperly relies on compliance with the building code to mitigate operational and construction energy impacts, without further discussion of the CEQA Guidelines, Appendix F criteria."

Here, the EIR states that all "[i]ndividual projects under the proposed CPHP would be required to comply with the UC Policy on Sustainable Practices, which requires new construction of facilities to meet a minimum standard of LEED-NC Silver and strive for LEED-NC Gold when possible and requires 20 percent better energy performance than Title 24[.]" (AR 1786.) UC asserts, "UCSF has committed to implement the energy reduction measures within its GHGRS as part of the LRDP and the CPHP to improve efficiency of existing buildings, including the requirement that new buildings be designed to surpass Title 24 energy efficiency standards and . . . attain LEED 'Silver' certification or equivalent." (AR 5988.) Based on this conclusory analysis, the EIR determined the CPHP would not result in wasteful, inefficient, or unnecessary consumption of fuel or energy. (AR 5988.)

UC's reliance on LEED certification fails because, as in *CCEC*, it fails to consider "whether a building should be constructed at all, how large it should be, where it should be located, whether it should incorporate renewable energy resources, or anything else external to the building's envelope."

(*CCEC*, *supra*, 225 Cal.App.4th at 21.) The EIR never explains whether the scope of LEED certification includes consideration of these issues.[34] Even if LEED certification accounted for such considerations, reliance on LEED certification also fails because the UC's Policy on Sustainable Practices, which the EIR identifies as the ultimate legal authority imposing the requirement for LEED Silver certification,[35] includes an express waiver procedure for LEED certification. (AR 33958 ["Any proposed waiver from section III.A of the Policy may be requested administratively from the UCOP Executive Director of Capital Programs prior to first project approval"].)

The EIR fails to analyze whether the Project's significant increase in energy consumption is wasteful, inefficient or unnecessary. Further, UC may not sidestep this required analysis by pointing to Title 24 or LEED certification.

2. UC Relies on the Ratio Theory to Avoid Adequate Analysis of Cumulative Energy Impacts

The EIR finds the CPHP would not result in cumulatively considerable impacts from wasteful, inefficient, or unnecessary energy consumption. (AR 1788.) To arrive at this conclusion, the EIR impermissibly relies on the long-repudiated "ratio theory." (See *ante*.) The EIR repeatedly emphasizes that the CPHP would account for a miniscule amount of energy use across the state or the City (AR 1781-83), however, this "drop in the bucket" analysis is being used to circumvent analysis of whether the project's energy consumption is cumulatively "wasteful, inefficient, or unnecessary." (Guidelines, § 15126.2 (b); AR 1787 ["Given the relatively small percentage of the CPHP's other fuel and energy uses compared to existing fuel and energy use in the region"].) Reliance on the "ratio theory" is improper.

Setting aside the EIR's reliance on the ratio theory, the cumulative analysis is defective also because it identifies no significance criteria for the cumulative impacts. (AR 1787.) The EIR's analysis relies heavily on Title 24 and LEED to show "efficiencies," but does not analyze the cumulative impact against any identifiable significance standard. (AR 1787; *Lotus*, *supra*, 223 Cal.App.4th 645, 657 ["Simply stating that there will be no significant impacts because the project incorporates 'special construction techniques' is not adequate or permissible" to meet CEQA requirements.].) Rather than analyze how the Project's large increase in energy consumption could contribute to a cumulative impact, the EIR instead concludes, "[O]perational electricity requirements of the CPHP would not be cumulatively considerable and the estimated consumption rate would not be substantial compared to the 2018 citywide consumption." (AR 1787.) What this fails to determine, for example, is whether doubling

[34] The most detailed description of LEED certification is buried in the administrative record, and characterizes LEED as "a green building rating system" and identifies four levels: Certified, Silver, Gold and Platinum. (AR 33941.)

[35] The revised LRDP accommodating the CPHP states, "The Sustainable Practices Policy sets the following additional requirements and goals relevant to GHG emissions reduction." (AR 48.)

the site's use of electricity would affect the local grid or whether an additional 642,064 MMBTU of natural gas a year would be cumulatively considerable. (AR 1779.)

In summary, the EIR fails as an informational document with respect to the Project's project-level and cumulative analysis as to whether the proposed dramatic increases in energy consumption are inefficient, wasteful or unnecessary.

M. The EIR Fails to Analyze Off-Site Alternatives

CEQA's mandates are enforced vis-à-vis project alternatives and mitigation measures. The Supreme Court set aside the EIR certified in *Banning Ranch Conservancy v. City of Newport Beach* (2017) 2 Cal.5th 918, 937 based on the city's failure to "meaningfully address feasible alternatives or mitigation measures." The Court rejected a flawed EIR for the expansive Newhall Ranch project following multiple EIRs spanning a decade. (*Newhall Ranch I*, *supra*, 62 Cal.4th 204.) Justice Kathryn Werdegar's majority opinion, noting Justice Ming Chin's dissent warning of "inordinate delay" attending an additional CEQA process, underscored that judicial review of an EIR cannot turn on

> ... independent assessment of the project's environmental merits. Even if Newhall Ranch offered the environmentally best means of housing this part of California's growing population, CEQA's requirements for informing the public and decision makers of adverse impacts, *and for imposition of valid, feasible mitigation measures*, would still have to be enforced.

(*Id.* at 240, italics added.)

1. Alternatives Enforce CEQA's Substantive Mandate

Public Resources Code section 21002 lays out the state policy that "agencies should not approve projects as proposed if there are feasible alternatives . . . that would substantially lessen their significant environmental effects." The same code section explains that environmental processes — in this case, an EIR — are practical: they are "*intended to assist public agencies*" in evaluating impacts and identifying alternatives. (§ 21002, italics added; *see* § 21002.1 (a).)

Consistent with this premise, the Supreme Court held in *City of Marina* that CEQA requires agencies "to avoid or mitigate, if feasible, the significant environmental effects of their project." (*City of Marina*, *supra*, 39 Cal.4th at 369; see also *Preservation Action*, *supra*, 141 Cal.App.4th at 1350 ["agencies should not approve projects as proposed if there are feasible alternatives . . . which would substantially lessen the significant environmental effects . . . ")

CEQA's "substantive mandate" is further implemented in section 21081, and *does not allow an agency to approve a project with significant impacts for which there are feasible alternatives.* (*Mountain Lion Foundation*, *supra*, 16 Cal.4th at 123, 134.) A further relevant mandate, applicable only *after* feasible mitigations and alternatives have been adopted, is that projects can be approved despite

significant impacts when specific "economic, social, or other conditions" — factors *external* to the project itself — make mitigation infeasible. (§§ 21002, 21002.1.)

To approve a project with significant environmental impacts, UC therefore must first impose project alternatives and mitigation measures found to be feasible — enforcing CEQA's substantive mandate — and then, if significant impacts remain, adopt a supportable finding of overriding public benefit. (§ 21081; *City of Marina*, *supra*, 39 Cal.4th at 350.) The findings must be made in order, and while both must be fact-based, the Legislature reserved policy considerations for the latter. (*Ibid.*)

2. EIRs Must Analyze Potentially Feasible Alternatives that Reduce Project Impacts

CEQA requires that lead agencies consider alternatives at two stages in the EIR process. First, a draft EIR must analyze a range of reasonable alternatives. (Guidelines, § 15126.6.) Later, when the agency considers whether to approve or carry out the project as proposed, it cannot do so if a feasible alternative would substantially reduce significant effects. (Guidelines, § 15092 (b)(2)(A).)

To explore ways to meet as many goals as possible while protecting the environment, EIRs thus must evaluate alternatives that accomplish "most" basic objectives. (Guidelines, § 15126.6 (a); *Preservation Action*, *supra*, 141 Cal.App.4th at 1353.) Alternatives warrant study in the EIR process if they can reduce or avoid impacts and are "potentially feasible." (Guidelines, §§ 15126.6 (a), (c) , (f); *Watsonville Pilots Association v City of Watsonville* (2010) 183 Cal.App.4th 1059, 1087 (*Watsonville Pilots*).) As to whether an EIR has evaluated a range of reasonable alternatives, "[e]ach case must be evaluated on its facts ... in light of the statutory purpose." (*Watsonville Pilots*, *supra*, 183 Cal.App.4th at 1086, citing *Citizens of Goleta v. Board of Supervisors of Santa Barbara County et al*. (1990) 52 Cal.3d 553, 566 (*Goleta II*).) The nature and scope of the alternatives to be studied are governed by the rule of reason. (Guidelines, § 15126.6 (a); *In re Bay-Delta Programmatic Environmental Impact Report Coordinated Proceedings* (2008) 43 Cal. 4th 1143, 1163 (*In re Bay-Delta*).)

CEQA defines feasible: "capable of being accomplished in a successful manner within a reasonable . . . time, taking into account economic, environmental, social, and technological factors." (§ 21061.) External factors — "legal, social, . . . or other considerations, including considerations for the employment opportunities for highly-trained workers" — may also be relevant. (§ 21081 (a)(3).) Feasible alternatives are allowed to "impede to some degree the attainment of the project objectives, or . . . be more costly." (Guidelines, § 15126.6 (b).)

Finally, an "alternative that is potentially feasible should not be excluded from an EIR simply because it may not further all of the agency's policy objectives." (*Watsonville Pilots*, *supra*, 183 Cal.App.4th at 1087.) *Watsonville Pilots* found legal error when a draft EIR failed to evaluate a reduced

development that failed to meet two of twelve objectives: "The City's argument on this issue is premised on its claim that no discussion of an alternative is required if that alternative would not meet a project objective. This premise is mistaken." (*Ibid*.)

3. The EIR Fails to Analyze Alternate Locations for Expansion

The CPHP DEIR identified several alternatives suitable for analysis, as follows: "No Project Alternative, consisting of No Development and Development under the 2014 LRDP;" "Reduced Project;" CPHP including New Hospital: 19-Story Option;" and CPHP including New Hospital - Phased Option." (AR 2106, 4271, 5754.) The DEIR formulated but dismissed from analysis the off-site alternatives of building the new hospital at UCSF's Mission Bay or Mount Zion properties. (AR 2154; 2157; 4319; 4322.) UC prejudicially abused its discretion by refusing to analyze these off-site alternatives within the EIR process as well as rejecting the Hunters Point/Candlestick location.

a. The Mission Bay Location

The EIR admits that the Mission Bay alternative would reduce the CPHP's significant wind impact in the vicinity of the new hospital, avoid the significant adverse impact of demolishing the historic Langley Porter Psychiatric Institute, and would also avoid construction and operational impacts associated with the new hospital. (AR 2155, 4320.) The EIR also finds that the Mission Bay alternative would result in "an estimated 284 fewer overall [hospital] beds at Parnassus Heights;" that "there are bed shortages for critical and acute care" in the City and the greater Bay Area, and the Mission Bay site thus "would not meet this growing demand, or allow for an expansion of emergency, surgical, interventional radiology, and imaging services, at this campus site." (AR 2104, 2164; 4269, 4319.)

However, increasing beds "*at Parnassus Heights*" is an unduly and self-servingly narrow EIR objective, precluding consideration of *any* off-site alternative. The DEIR fails to explain why the Mission Bay alternative could not be configured to increase available beds and why it is not "potentially feasible," which is the applicable legal standard, and led to a later unsupported finding that all alternatives were infeasible and eliminated from further consideration in the Draft EIR. (AR 247.)

The DEIR also finds, without support or fact-based analysis, that the Mission Bay alternative would "conflict with several 2014 LRDP objectives for the Parnassus Heights campus site" including the preference to locate instruction, clinical, research, and support uses in proximity "to foster collaboration and to facilitate the inter-dependence and connectivity for operational efficiency and effectiveness of instruction, clinical, research and support uses in close physical proximity to each other;" and "(e)nsure that Long Hospital and the New Hospital Addition have adequate clinical and administrative support and are aligned with education, research and specialized care programs and support that remain at the campus site." (AR 2155, 4320.)

The purported conflict is unsupported to the point of absurdity, rendering the EIR analysis inadequate. The EIR fails to explain that the 2014 LRDP contemplated meeting the same objectives without the vast expansion proposed in the CPHP. Moving some new facilities to Mission Bay would not conflict LRDP objectives, nor fundamental EIR objectives for the "New Hospital." (AR 1449.)

The DEIR pronounces that "by not developing a New Hospital at the Parnassus Heights campus site, and focusing future new clinical uses at the Mission Bay campus site, this potential alternative would also result in decreased efficiency for UCSF staff and students." (AR 2155, 4320.) "Decreased efficiency" is subjective, is not a fundamental objective á la *In re Bay-Delta*, and is a trumped-up reason *not to analyze* this alternative. Meeting all conceived objectives is not the standard at the EIR stage for an alternative that can reduce significant impacts. (*Watsonville Pilots*, *supra*, 183 Cal.App.4th at 1087.)

Goleta I, *supra*, 197 Cal.App.3d at 1179-80 held that an EIR for a resort hotel should have considered an alternate site: "Reason requires that the agency charged with the duty to protect the environment compare impacts at feasible alternative locations." As discussed ante, off-site alternatives cannot be rejected for analysis because a project proponent *does not want* an off-site project, any more than a reduced-size project can be rejected for that reason. (*Uphold Our Heritage*, *supra*, 147 Cal.App.4th at 602; *Preservation Action*, *supra*, 141 Cal.App.4th at 1355-56.) Otherwise, CEQA's requirement for consideration and analysis of off-site alternatives is meaningless.

Petitioner Yerba Buena Neighborhood Consortium submitted comments on the Draft EIR that explain that Mission Bay could

> ... fully accommodate expanded UCSF development of this scale and meet fundamental project objectives (*In re Bay-Delta* (2008) 43 Cal.4th 1143.) That of course is exactly what happened once before in 1996 with the decision to locate a new UCSF research campus in the already-approved Mission Bay Redevelopment Project.

(AR 6178.) Mission Bay is a logical, beneficial site at which to achieve project benefits without significant impacts, as is a promising hybrid alternative rejected from consideration: "No New Hospital at Parnassus Heights Campus Site/Implement Phase 2 of Medical Center at Mission Bay Campus." "In fact, the Mission Bay Hospital was justified in part by the development cap at the Parnassus Campus." (AR 5855.) The claim of increased crosstown traffic is not supported by evidence or analysis.

Failure to address alternatives utilizing the Mission Bay site in the DEIR was error warranting issuance of a peremptory writ. As pointed out in comments by the Consortium, "[t]he now almost-finished Mission Bay Project has conclusively proved that a UCSF campus can be a catalyst project that makes master-planned projects like these financially feasible for development. In particular, associated bio-med commercial development remains potentially viable."

b. The Mount Zion Location

The Mount Zion alternative location, two miles from the Parnassus Heights project site, reduces or avoids the same significant environmental impacts as the Mission Bay location. It was rejected for EIR analysis for failing to meet the same non-fundamental project objectives and creating the same purported "inefficiencies." The DEIR objects to Mount Zion as "less than ideal." (AR 2157, 4322.) This is not a CEQA standard. (*Laurel Heights I*, *supra*, 47 Cal.3d at 400.) Like Mission Bay, there is a rejected reasonable partial alternative that should also be considered; locating the new hospital at Mount Zion would remove significant impacts at Parnassus and meet fundamental objectives. (AR 255-57.)

c. The Hunters Point Location

The Draft and Final EIRs also fail to mention the Hunters Point off-site alternative that the Yerba Buena Neighborhood Consortium urged for consideration. UC owns 3.8 acres in Hunters Point with two single-story buildings used for an animal care facility. (AR 13583.) The City submitted EIR comments that included a draft "Racial & Social Equity Initiative" planning approach referencing Bayview/Hunters Point. (AR 6718, 6721-23, 6727-28.) When the 2014 LRDP was published, San Francisco had approved the Candlestick-Hunters Point Shipyard Development Plan, an extensive mixed-use redevelopment plan that did not proceed. (*Ibid.*) As pointed out by planner Terry Watt, the EIR fails to properly analyze project alternatives, including locating a new hospital at Hunters Point:

> Feasible alternatives to the Project, improperly dismissed by the Final EIR, that would reduce or eliminate significant Project impacts should be reinstated for consideration including . . . No New Hospital at Parnassus Heights Campus Site and instead one of the following: Implement Phase 2 of Medical Center at Mission Bay Campus Site; New Hospital at Mount Zion Campus Site; . . .New Hospital at Hunters Point at the Candlestick site formerly slated for a new shopping mall. Locating the new hospital here would avoid many of the impacts associated with the Parnassus site, and would have many co-benefits such as providing jobs in and health services to an underserved and disadvantaged community.

(SAR 63068-69.)

4. The FEIR Failed to Respond to Comments Regarding Off-site Alternatives

Petitioners have discussed the importance of adequate responses to EIR comments relative to EIR analysis, *ante*. As in many CEQA cases, especially those involving projects of regional importance and impact, the legal problem is both that the EIR failed to analyze the off-site alternatives *and*, as a separate violation of CEQA, that it failed to respond to public comments that requested the analysis.

The FEIR's "Master Response 5: EIR Alternatives" restates the DEIR's reasons for not analyzing the Mission Bay and Mount Zion alternatives and concludes that

> an alternative that would adopt and implement the CPHP without construction of a New Hospital at Parnassus Heights . . . would not address one specific need . . . which is the need for co-location of instructional, research, and clinical spaces, and would not achieve most of the basic project objectives as shown in Table 8.3-1 below.

(AR 5757 [Mission Bay]; 5759 [Mount Zion].) The master response points out that objectives "for the Parnassus Heights campus site... appropriately focus on UCSF's goals for the campus site, *since the proposed project is a plan for that campus site*." (AR 5754, italics added.) Under such circular logic, no project/plan EIR would need to consider off-site alternatives. Instead, CEQA requires consideration of "alternative locations" for a project based on the answer to a "key question":

> The key question and first step in analysis is whether any of the significant effects of the project would be avoided or substantially lessened by putting the project in another location. Only locations that would avoid or substantially lessen any of the significant effects of the project need be considered for inclusion in the EIR.

(Guidelines, § 15126.6 (f)(2)(A).) There is a caveat; if "no feasible alternative locations exist" of course a non-existent alternate site cannot be considered; "for example, . . . a geothermal plant or mining project must be in close proximity to natural resources at a given location." (*Id*. at (f)(2)(B).) The FEIR references *California Native Plant Society v. City of Santa Cruz* (2009) 177 Cal.App.4th 957, which dealt with needs of a public park that could only be resolved in that location. (AR 5755.)

The FEIR master response conflates the "potentially feasible" standard for including an alternative for analysis in a draft EIR with the "actually feasible" standard applicable to an agency's decision to *adopt* an alternative instead of the proposed project. But neither standard requires that every listed project objective be met. (*Watsonville Pilots*, *supra*, 183 Cal.App.4th at 1087.) The response never considers whether alternatives are "potentially feasible" and provides no substantial evidence to the contrary. Importantly, the omission of off-site alternatives for EIR discussion deprived the public and decision-makers of essential information.

Inadequate responses to individual comments regarding off-site alternatives include:

- **Comment Letter O-YNBC: Yerba Buena Neighborhood Consortium**. The Consortium urged EIR consideration of alternate off-site locations "to meet fundamental project objectives," noting "that is exactly what happened in 1996 with the decision to locate a new UCSF research campus in the already-approved Mission Bay Redevelopment Project." (AR 6178; see also Comment Letter I-Goodman (AR 23, 6316, 6326-27).) The FEIR relied on its inadequate Master Response 5, discussed *ante*, providing no comment-specific analysis. (AR 6179.)

- **Comment Letter I-Leonard: Edward Leonard**. The Leonard letter reiterates the need for the EIR to analyze alternate sites, especially in light of the space ceiling that UC committed to because "expansion at the Parnassus Campus was not feasible." (AR 6380, 6383-84.) "There are

several suitable, if not superior, alternatives to accomplishing UCSF's objectives, not requiring the building of an elephantine structure, completely unsuitable for the space it will occupy, in a residential neighborhood. If UCSF really requires a hospital as big as it claims, it should find an appropriately scaled new site." (AR 6379-84.) The FEIR again simply refers the commentor to its master response. (AR 6389.)

- **Comment Letter O-LD2: Lozeau Drury**. The 46-page letter written by attorney Richard Drury on behalf of the Parnassus Neighborhood Coalition addressed off-site alternatives in depth, including the need for analysis of the reasonable and potentially-feasible sites. (AR 5853-56.) Mr. Drury's analysis is reflected in the arguments presented *ante* regarding the DEIR's inadequate analysis of alternatives. The response again relies on Master Response 5. (AR 5978.)

The FEIR did not adequately respond to comments regarding the three off-site alternatives.

5. Approval Findings are Premature

In assessing feasibility of an alternative to reduce or avoid significant environmental impacts, an agency must consider whether external conditions stand in the way of its successful accomplishment rather than whether non-basic project objectives are met. UC's findings certifying the EIR and approving a project with many significant impacts and without locating any portion at an alternate site based on claimed infeasibility are both unsupported and premature. (AR 247-59.) As in the *Uphold Our Heritage* and *Preservation Action* cases, to name a few, an adequate EIR is prerequisite for considering CEQA approval findings. (*Ante*.) The UC Regents do not yet have sufficient information to determine feasibility of alternate sites for any or all Project purposes.

Conclusion

Petitioners request this Court's judgment and issuance of a peremptory writ of mandamus in the public interest, ordering the University of California to fully comply with CEQA. UC must first set aside approvals of the Comprehensive Parnassus Heights Plan and void its certification of the EIR.

Respectfully submitted.[36]

[36] This brief is co-written and is signed by counsel for Petitioners in three related cases (Case Nos. RG21088939, RG21089332, and RG21090517). By executing this brief, the undersigned counsel do not appear for or undertake representation of any petitioner other than as identified in the signature lines.

November 5, 2021

SOLURI MESERVE, A LAW CORPORATION

By: _____
Patrick M. Soluri
Attorneys for Plaintiffs and Petitioners
PARNASSUS NEIGHBORHOOD COALITION AND CALVIN WELCH

November 5, 2021

LAW OFFICE OF THOMAS N. LIPPE

By: _____
Thomas n. Lippe
Attorneys for Petitioner SAN FRANCISCANS FOR BALANCED AND LIVABLE COMMUNITIES

November 5, 2021

WITTWER PARKIN LLP

By: _____
William P. Parkin
Attorneys for Petitioner SAN FRANCISCANS FOR BALANCED AND LIVABLE COMMUNITIES

November 5, 2021

BRANDT-HAWLEY LAW GROUP

By: _____
Susan Brandt-Hawley
Attorney for Petitioner
YERBA BUENA NEIGHBORHOOD CONSORTIUM

PROOF OF SERVICE

I hereby declare that I am employed in the City of Sacramento, County of Sacramento, California. I am over the age of 18 years and not a party to the action. My business address is 510 8th Street, Sacramento, California 95814.

On November 5, 2021, I served the following document:

PETITIONERS' REVISED OPENING BRIEF ON THE MERITS

on the parties or attorneys for parties listed on the attached Service List.

Service was caused as follows:

✓ **BY ELECTRONIC MAIL**: I caused each such document to be served via One Legal, a court approved electronic filing service provider, by transmitting and uploading a true copy of such documents through One Legal's web interface and by providing the following email addresses listed below in the attached Service List.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct. Executed at Sacramento, California on November 5, 2021.

Mae Ryan Empleo

SERVICE LIST

Charles R. Olson Philip J. Sciranka Carolyn J. Lee LUBIN OLSON & NIEWIADOMSKI LLP The Transamerica Pyramid 600 Montgomery Street, 14th Floor San Francisco, California 94111 Telephone: (415) 981-0550 Facsimile: (415) 981-4343 E-mails: colson@lubinolson.com psciranka@lubinolson.com clee@lubinolson.com msaephan@lubinolson.com jwilson@lubinolson.com *Attorneys for Respondent* *The Board of Regents of the University of California et al.*	Anagha Dandekar Clifford UNIVERSITY OF CALIFORNIA Office of General Counsel 1111 Franklin Street, 8th Floor Oakland, California 94607 Telephone: (510) 987-0356 Facsimile: (510) 987-9757 E-mail: anagha.clifford@ucop.edu *Attorneys for Respondent* *The Board of Regents of the University of California et al.*
Thomas N. Lippe Kelly Perry LAW OFFICES OF THOMAS N. LIPPE, APC 201 Mission Street, 12th Floor San Francisco, CA 94105 Telephone: (415) 777-5604 Facsimile: (415) 777-5606 E-mails: Lippelaw@sonic.net; kmhperry@sonic.net *Attorneys for Petitioner* *San Franciscans for Balanced and Livable Communities*	William P. Parkin WITTWER PARKIN LLP 335 Spreckels Drive, Suite H Aptos, CA 95003 Telephone: (831) 429-4055 Facsimile: (831) 429-4057 E-mail: wparkin@wittwerparkin.com *Attorneys for Petitioner* *San Franciscans for Balanced and Livable Communities*
Susan Brandt-Hawley Jeanie Stapleton BRANDT-HAWLEY LAW GROUP P.O. Box 1659 Glen Ellen, CA 95442 Telephone: (707) 938-3900 E-mails: susanbh@preservationlawyers.com; jstapleton@preservationlawyers.com *Attorneys for Petitioner* *Yerba Buena Neighborhood Consortium, LLC*	

EXHIBIT 15

Patrick M. Soluri (SBN 210036)
Osha R. Meserve (SBN 204240)
James C. Crowder (SBN 327653)
SOLURI MESERVE, A LAW CORPORATION
510 8th Street
Sacramento, California 95814
Telephone: (916) 455-7300
Facsimile: (916) 244-7300
Emails: patrick@semlawyers.com;
osha@semlawyers.com; james@semlawyers.com

Attorneys for Plaintiffs and Petitioners Parnassus Neighborhood Coalition and Calvin Welch

IN THE SUPERIOR COURT OF THE STATE OF CALIFORNIA

IN AND FOR THE COUNTY OF ALAMEDA

PARNASSUS NEIGHBORHOOD COALITION; and CALVIN WELCH, Plaintiffs/Petitioners, v. THE BOARD OF REGENTS OF THE UNIVERSITY OF CALIFORNIA; and DOES 1 through 10, inclusive, Defendants/Respondents.	CASE NO. RG21088939 Related Cases: Case No. RG21089332 and Case No. RG21090517 Assigned for all Purposes to: Judge Frank Roesch, Department 17 **PETITIONERS' REPLY BRIEF ON THE MERITS** [CEQA CASE] Trial Date: January 14, 2022 Time: 2:00 p.m. Dept.: 17 Complaint Filed: February 19, 2021

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Introduction

The merits of this public interest action are not refuted by the University of California. The CPHP EIR fails to achieve its purpose. As always, the standard of review plays a critical role in assessing CEQA compliance. The Supreme Court has in recent years reiterated that if an EIR process fails to comply with mandated procedures, or if the EIR omits essential information or insufficiently analyzes impacts, judicial review is de novo, while the substantial evidence standard applies to factual findings. UC's repeated, incorrect assertions of broader substantial evidence review invite error.

The context of UC efforts to overbuild the Parnassus Heights campus warrant mention as remarkable and relevant. The campus is beautiful, historic, and constrained. Indeed, in the 1990's UC developed a facility a few miles away at Laurel Heights justified by the claimed infeasibility of expansion at Parnassus. The constraints remain, and the CPHP EIR's failure to analyze *any* potentially feasible off-site alternatives at *sites owned by UC* — which it has long admitted are essential to avoid overbuilding Parnassus — violates CEQA.[1]

Petitioners in the related cases respectfully request this Court's judgment and peremptory writ.

Discussion

A. The EIR Fails to Analyze Any Off-Site Alternatives

The CPHP EIR failed to study — and therefore, the UC Regents had no opportunity to review or adopt — potentially feasible off-site alternatives. UC *owns multiple properties* in San Francisco that were acquired specifically to address space constraints at Parnassus, and so can meet fundamental plan objectives and avoid or reduce significant impacts at Parnassus. The error is prejudicial because identifying and adopting feasible alternatives is the primary goal of CEQA.

In arguing that it sufficiently studied and rejected off-site alternatives, UC's brief misstates the law. First, it posits that as the lead agency, it — instead of "a project's critics" — has sole responsibility for formulating a range of alternatives for the EIR to study (Respondents' Opening Brief (ROB) 67:11), citing *Laurel Heights Improvement Association v. Regents of the University of California* (1988) 47 Cal.3d 396, 406 (*Laurel Heights I*). In *Laurel Heights I*, the Regents had argued that "CEQA places the

[1] If UC is ordered to produce the relevant record documents that it has withheld to date, including, for example, documents that it describes as addressing its decision not to pursue EIR analysis of alternative UC-owned sites, petitioners will seek to supplement their merits briefing as appropriate.

burden of identifying alternatives" on environmental petitioners. The Supreme Court ruled their position was "not supported" because the *responsibility for EIR adequacy* lies with the lead agency. (*Ibid*.)

The take-away is that concerned citizens are *not required to* — but may — point out deficiencies in an EIR process so that a lead agency will meet its responsibilities to certify an adequate EIR. "'It is not limited to alternatives proposed and justified by objectors [to an EIR].' (*Citizens of Goleta Valley v. Board of Supervisors* (1988) 197 Cal.App.3d 1167, 1178.)" (*Laurel Heights I, supra*, 47 Cal.3d at 406.)

It is ironic that UC relies on *Laurel Heights I,* in which the Supreme Court reviewed the inadequate EIR prepared when UC expanded its San Francisco properties to a new campus two miles away from Parnassus in Laurel Heights *because* "there were serious space constraints at the Parnassus campus and ... a need to develop off-campus locations for academic and support activities. (*Laurel Heights I, supra*, 47 Cal.3d at 388.) To be clear, UC justified acquisition of the Laurel Heights site to avoid new construction that otherwise would have caused significant impacts at Parnassus. (*Ibid.*)

The revised EIR for Laurel Heights was again at issue in *Laurel Heights Improvement Association v. Regents of the University of California* (1993) 6 Cal.4th 1112, 1141 (*Laurel Heights II*):

> [The Parnassus Heights] campus .... *is the most densely developed* of all [UC] facilities. The draft EIR ... explains that, because the necessary space at the Parnassus Heights campus can only be created by demolition of existing buildings fully in use or by violating the limits adopted in the long-range development plan, the alternative of *expansion at this site is infeasible*.

(Italics added.) UC lacks credibility when it now contends that it is not even *potentially* feasible to construct new facilities at its other City campuses, that the CPDP EIR thus need not study any off-site alternatives, and that it is *only* feasible to build new facilities at Parnassus. (ROB 67-69.) The Parnassus campus site has not grown since UC took the position that it could not feasibly accommodate a 370,000 square-foot research facility. (*Laurel Heights II, supra*, 6 Cal.4th at 1120.) The CPHP, including the proposed 995,000 square-foot New Hospital (Petitioners' Opening Brief (POB) 12), would cause significant environmental impacts and the demolition of buildings of even more historic importance today than in 1982. UC has to date protected its historic resources and avoided significant impacts by development at Laurel Heights, Mt. Zion, and Mission Bay, *away from* Parnassus.

UC argues, based on inaccurate references to CEQA Guidelines [14 Cal.Code Regs.], sections 15151 and 15384, that courts review an EIR's range of project alternatives for substantial evidence.[2]

[2] Guideline 15151 describes standards for EIR adequacy; 15384 defines substantial evidence. Neither directs that the range of alternatives for study in an EIR is reviewed for substantial evidence.

(ROB 67:12-13.) Instead, "[e]ach case must be evaluated on its facts ... in light of the statutory purpose." (*Watsonville Pilots Association v. City of Watsonville* (2010) Cal.App.4th 1059, 1086 (*Watsonville Pilots*) [Citation].) The nature and scope of the alternatives to be studied in an EIR is governed by the rule of reason. (Guidelines, § 15126.6 (a); *In re Bay-Delta* (2008) 43 Cal.4th 1143, 1163.) Further, "the fact that agency decision-makers may ultimately find an alternative infeasible does not necessarily preclude it from being discussed in the EIR. An alternative that is potentially feasible should not be excluded from an EIR simply because it may not further all of the agency's policy objectives." (*Watsonville Pilots*, *supra*, 183 Cal.App.4th at 1087.)

Of course, an EIR need not study "each and every conceivable variation" of a proposed project. (ROB 67:14-15.) And that is not what petitioners seek, any more than they pursue *any* trivial or "gotcha" CEQA violation. UC pronounces that no off-site alternative would meet its objective to "revitalize the aging Parnassus Heights campus." (ROB 67-68.) But three suggested off-site locations *already owned by UC* can accommodate the New Hospital *while revitalization of the Parnassus campus proceeds with other important, long-planned project components*. As the alternate sites can "attain most of the basic objectives" of the plan and reduce significant impacts, EIR review will "foster meaningful public participation and informed decision making." (ROB 67:17; Guidelines, § 15126.6 (f).)

UC unlawfully excluded study of *any and all* off-site alternatives based on an unduly narrow definition of "revitalizing the Parnassus campus." Analysis of alternate sites in the EIR is critical to inform the Regents' consideration of the feasibility of locating some new facilities — *e.g.*, the New Hospital — off-site to reduce or avoid significant impacts. "While a lead agency may not give a project's purpose an artificially narrow definition, [it] may structure its EIR alternative analysis around a reasonable definition of underlying purpose." (*In re Bay-Delta*, *supra*, 43 Cal.4th 1143, 1166.)

UC attempts to distinguish this case from *Watsonville Pilots, supra,*183 Cal.App.4th at 1087, arguing that the record proves that alternate sites *cannot* accomplish "most" project objectives. But UC focuses on only 5 out of 42 objectives, not "most;" further, the cites do not prove what UC says they do:

AR 247-48: UC's CEQA findings "screen out" EIR review of a New Hospital at Mission Bay or Mt. Zion. Any large project has environmental consequences. UC's omission of alternate sites from analysis relate to unstudied impacts of differences between the current and *any* revised project — fewer beds *at Parnassus*, theoretical increase in some cross-town traffic between Mission Bay and Parnassus, decreased benefits of interdisciplinary collaboration *at Parnassus.* The findings assume but do not show infeasibility, greater impacts than the current project, or failure to accomplish fundamental objectives.

AR 255-57: UC's CEQA findings address responses to EIR comments requesting analysis of off-site alternatives. The findings refuse to study the alternatives, but acknowledge that locating the New Hospital at the Mission Bay or Mt. Zion campuses would reduce conceded impacts at Parnassus, while other impacts will shift from Parnassus to the new hospital sites.

AR 2154-57; AR 4319-22: The Draft EIR provides a conclusory discussion as to why alternatives were "dismissed from further evaluation," later mirrored in the findings addressed at AR 247-48, above, without underlying analysis, *e.g*. "increase potential cross town traffic."

AR 5756-57: The EIR responds to comments requesting analysis of off-site alternatives, particularly for the New Hospital, and provides a conclusory discussion as to why *no* off-site alternatives could satisfy objectives relating to the Parnassus site, later mirrored in the findings addressed at AR 255-57, above. The conclusory response is not adequate.

Finally, UC argues that it had sufficient information as to whether alternate sites were feasible "including multiple prior EIRs addressing the issue." (ROB 71:17-19.) UC then repeats the AR citations to the findings and EIR pages discussed above regarding alternatives rejected from study in the EIR; adds a cite to the Draft EIR Alternatives section that contains the four (*on*-site) alternatives that the EIR did study, and ends with cites to a 5000-page block at AR 8981-13658 [documents from 2005-2014]. The citations are not probative or even helpful.

Absent analysis of *any* off-site alternatives *in the EIR*, UC's violation of CEQA is blatant.

B. EIR Analysis of Growth Inducing and Population/Housing Impacts is Inadequate

Contrary to UC's argument (ROB 25:9-16), petitioners do not confuse the EIR's growth inducement and population/housing analyses. Read together, both chapters fail to assess off-campus housing displacement impacts of increasing campus population or the physical impacts of building housing to meet increased demand. (POB 17:4-26.)

1. The EIR Omits Analysis of Off-Campus Housing Displacement Effects

Petitioners claim that the EIR's analyses of Impacts POP-1 and POP-2 improperly exclude consideration of housing displacement effects in the surrounding community. The EIR's analysis of Impact POP-1 relates to "unplanned population growth" and the creation of "demand for housing outside the market area" while its analysis of Impact POP-2 only considers temporary displacement of on-campus tenants. (POB 17-21.) UC fails to address the fact that the POP-2 analysis is improperly limited geographically and fails to assess displacement as opposed to mere growth in housing demand.

UC's argument that "the CPHP is adding housing for some of the population growth related to CPHP" (ROB 25:5-6, citing AR 1983) ignores the EIR's failure to analyze off-campus displacement. (POB 19:3-16; *American Canyon Community v. City of American Canyon* (2006) 145 Cal.App.4th 1062, 1066-1067, 1081-1082 [failure to consider extraterritorial effects]; *Lotus v. Dept. of Transportation* (2014) 223 Cal.App.4th 645, 658 (*Lotus*) [substituting mitigation for impact analysis violates CEQA].)

UC pronounces the EIR's characterization of population growth not off-set by new campus housing as "insubstantial" when compared to regional growth as "satisfied by housing that could be added" in the study area; and "within the capacity" of the five-county market area. (ROB 24:13-21; citing AR 1980-81, 1984-85.) But capacity to meet housing demand growth is not relevant under the threshold of significance: which is whether a project would "displace substantial numbers of existing people or housing" and create need for replacement housing. (POB at 18:4-7.) EIR review is needed.

While UC's new population might theoretically be housed without displacement if housed only in new units, that is not UC's plan. UC committed to provide over 1200 housing units for its population from existing units, so significant displacement of residents will certainly occur. (AR 1314-15.) What is missing from the EIR is analysis that relates the CPHP's 4,000 to 6,000-unit increased housing demand to baseline and cumulative conditions. Such analysis would allow a prediction of the extent to which the CPHP may cause off-campus displacement or require construction of housing.

Planner Terry Watt presented a fair argument that project demand would outstrip local supply and identified information that the EIR should have but fails to provide, including housing availability in the surrounding neighborhood, affordability, local and new population incomes, and rents. (POB 18:14-22.) Watt provided uncontroverted evidence that San Francisco has been creating 8.2 jobs per housing unit since 2010; that there is a regional housing shortfall of 700,000 units; that the Bay Area has produced only 35% of the units required for moderate and lower income workers since 1999; and that the City is experiencing gentrification. (AR 5989-5990.) Watt cites salary data that the new UCSF population would compete for housing affordable to lower income families. (AR 5896.) Watt reasonably concludes that housing demand would cause a significant impact. (AR 5900.)

2. The EIR Erroneously Treats Displacement as a Speculative Social Effect

Petitioners claim that the EIR fails to proceed as required by CEQA due to informational inadequacy; UC's argument that substantial evidence supports the EIR's conclusion regarding population and housing impacts is irrelevant. (ROB 23:9-24:21; POB 15:26-16:1.) Since the EIR fails to

assess the significance of project-induced off-campus displacement or need for replacement housing, whether substantial evidence could support a finding to that effect is premature. (POB 18:4-7.),

Contrary to UC's false flag argument, petitioners do not rely on *Stanislaus Audubon Society, Inc. v. County of Stanislaus* (1995) 33 Cal.App.4th 144, a negative declaration case, to support application of the fair argument standard here. (ROB 26:18-27:6; POB 14:27; 16:1, citing *Visalia Retail, LP v. City of Visalia* (2018) 20 Cal.App.5th 1, 13; *Protect the Historic Amador Waterways v. Amador Water Agency* (2004) 116 Cal.App.4th 1099, 1109 (*Amador Waterways*) [EIR must analyze every issue for which the record contains substantial evidence supporting a fair argument of significant impact].)[3]

UC does not point to any evidence that the EIR addresses the substance of Watt's fair argument or that its experts considered or reached a different conclusion regarding the indirect physical effects associated with displacement. Instead, while conceding that "new off-site housing would be constructed," UC argues that "it would be speculative to characterize the site-specific environmental effects." (ROB 26:10-11, citing AR 2098.) The EIR's assertion on this point is conclusory, without factual support. An agency "cannot divest itself of its analytical and informational obligations by summarily dismissing the possibility" of indirect effects. (*Bakersfield, supra,* 124 Cal.App.4th at 1207.) CEQA does not permit deferral of analysis of housing-related impacts simply because the precise nature and extent of development are unknown. (POB at 21:1-10). Both Watt and the City's public health guidance identify the elements of the required analysis, and Watt followed that guidance to provide an unrebutted fair argument that displacement effects would be significant. (AR 5879, 5989; 5894-5901 [Watt]; AR 6867-85 [SFDPH] 4-15.)

UC's argument that it was entitled to disagree with Watt regarding the potential significance of the displacement impact is irrelevant because the EIR did not evaluate the issue. UC's argument that it was entitled to ignore the City guidance because it is "not subject to City policies" (ROB 26:26) misses the point that this guidance provides part of the basis for fair argument that the impact may be significant, even if it is not directly enforceable against UC.

3. The EIR Incorrectly Applies "Ratio Theory" and an Improper Baseline

UC argues that the EIR does not rely on a ratio theory because its definition of "substantial

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[3] See also, *Bakersfield Citizens for Local Control v. City of Bakersfield* (2004) 124 Cal.App.4th 1184, 1207 (*Bakersfield*) [EIR must evaluate indirect physical effects of economic and social effects where fair argument standard is met]; 1208 [standard of review for whether EIR fails to analyze potentially significant indirect physical impact is whether agency failed to proceed as required by law].)

unplanned population growth" is growth "inconsistent with growth anticipated in adopted planning documents." (ROB 27:17.) UC also argues that the EIR establishes "an appropriate baseline" (AR 1973-74) and that the EIR shows that projected growth is consistent with "growth anticipated in adopted planning documents." (ROB 27:19-21.) These defenses fail.

Neither the EIR nor UC dispute the existence of the regional housing shortage documented by Watt. (POB 18:12.) CEQA does not permit a "ratio" analysis in which a project's contribution to a cumulative impact is deemed less than significant based "upon the individual project's relative effects…" (*Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692, 721.) The EIR cannot dismiss the significance of the project's contribution to the regional housing shortage simply because it "would not be substantial in comparison to growth that is projected and planned" for the region. (POB 21:24-22:5.) UC fails to address petitioners' authorities on this point.

The EIR fails to provide a legally adequate non-comparative, non-ratio cumulative analysis. An adequate analysis requires that the EIR first assess whether there is a significant cumulative impact from all projects taken together; if so, the EIR must separately determine if the project's contribution is considerable. (Guidelines, §§ 15065(a)(3); 15130(a); 15355; *Communities for a Better Environment v. California Resources Agency* (2002) 103 Cal.App.4th 98, 120 (*CBE v. Resources*) ["... the lead agency shall consider whether the cumulative impact is significant and whether the proposed project's incremental effects are cumulatively considerable"]; Kostka and Zischke, "Practice Under the California Environmental Quality Act" (2nd Ed., 2019 Update), § 13.39.) In that second determination, the EIR may not rely on a comparison or a ratio because "the greater the existing environmental problems are, the lower the threshold should be for treating a project's contribution to cumulative impacts as significant." (*CBE v. Resources, supra,* 103 Cal.App.4th at 120.)

Regarding the EIR's improper application of a future planning baseline, the EIR's error lies in using this baseline to exclude consideration of substantial evidence tending to show the physical impact may be significant. (POB 16:1, citing *Amador Waterways*, *supra*, 116 Cal.App.4th at 1108-1109.) UC also fails to address authority that comparison to planned growth improperly compares a project's impact to a plan for the future rather than to existing conditions. (POB 22:6-10.) Here, the relevant comparison must be to the existing conditions, not to future conditions, because the project will contribute to a significant existing housing shortage. Further, the EIR fails to demonstrate that the use of an existing conditions baseline would result in an inadequate or misleading analysis (*Neighbors for Smart Rail v. Exposition Metro Line Construction Authority* (2013) 57 Cal.4th 439, 457 (*Smart Rail*).)

4. The EIR Piecemeals Analysis of the New Housing Initiative

The EIR omits any analysis of UC's last-minute commitment to provide off-campus housing units in the City; therefore, it fails to evaluate the whole of the project. (POB 22:10-23:8.) UC does not dispute that its commitment to provide these units was not disclosed until issuance of the Final EIR.

The MOU commits UC to provide over 2500 rental units in the City for the UC population, of which about 1200 would be diverted from existing units and about 1200 would be new units. (AR 1314-15.) Of these units, 1,000 must be "UC Affordable Units" that are "comprised of new and existing units." (AR1315.) Thus, the MOU commits UC to displace non-UC tenants from at least 1,200 existing units and potentially to displace additional tenants as necessary to construct new units on existing residential sites. Omission of the MOU's housing unit commitment from the EIR's impact analysis understates the potential for displacing existing City residents.

Focusing on the 200 new units for which locations have not yet been identified, UC argues that there is "no proposal and no discretionary action yet to implement the additional 200 units." (ROB 28:7) This is incorrect. UC's commitment to provide these units is a discretionary action. (*Save Tara v. City of West Hollywood* (2008) 45 Cal.4th 116, 139 (*Save Tara*).)

UC argues that the new units include two projects that completed CEQA review years ago, plus 200 additional units for which City would conduct CEQA review in the future, thereby obviating the need for CEQA review now. (ROB 27:22-28:9.) These arguments fail. The EIR failed to "tier" to such past review as required by CEQA. (*Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova* (2007) 40 Cal.4th 412, 443 (*Vineyard Area Citizens*), quoting Guidelines, §§ 15150(c) [when an EIR incorporates an earlier environmental document by reference, "the incorporated part of the referenced document shall be briefly summarized" and "[t]he relationship between the incorporated part of the referenced document and the EIR shall be described"]; see § 15152 (g).) UC's brief cannot cure the EIR's failure to tier to an earlier CEQA document.

Regarding the promise of future CEQA review for the rest of the units, UC cites nothing in the MOU requiring such review. Even if it did, future "CEQA review" could result in an exemption from CEQA, perfecting the piecemealing violation that began with this EIR's failure to analyze the impact of providing the new units. Also, the EIR cannot tier *from* a future environmental document. (*Vineyard Area Citizens, supra,* 40 Cal.4th at 440 [Court rejected this "approach as legally improper"].) Also, UC's pre-commitment may improperly "preclude any alternatives or mitigation measures that CEQA

would otherwise require to be considered, including the alternative of not going forward with the project." (*Save Tara, supra,* 45 Cal.4th at 139.)

C. The EIR Inadequately Analyzes Beach Water Quality Impacts

1. Standard of Review

UC asserts that an EIR's description of the environmental baseline is reviewed for substantial evidence. (ROB 28, citing *Smart Rail, supra,* 57 Cal.4th at 447-49; *Communities for a Better Environment v. South Coast Air Quality Management Dist*. (2010) 48 Cal.4th 310, 328 (*Communities*).) These cases are inapposite. *Smart Rail* involved a claim that an EIR's description of future conditions as its environmental baseline, rather than existing conditions, was improper. *Communities* challenged an agency's choice of methodology to measure changing baseline conditions. Here, the challenge is to the EIR's failure to describe the physical and regulatory components of the environmental setting as they relate to beach water quality. (AR 1895-1911.) The Court reviews de novo whether the EIR omitted this essential information as a failure to proceed in the manner required by law. (POB 14.)

2. The EIR Fails to Adequately Describe the Environmental Baseline

Petitioners' opening brief details the EIR's failure to describe severely-degraded existing beach water quality conditions and the ineffectiveness of existing regulatory controls. (POB 25-26.) In response, UC argues it is "not in a position to verify observed non-compliance or opine on potential future enforcement actions by regulatory agencies" nor to "compel regulatory agencies governing San Francisco's sewage treatment plants to enforce compliance with their own regulations." (ROB 29:6.) This argument misconceives the claim. The issue is not what actions UC must take to clean up water pollution in San Francisco; the issue is whether the EIR properly analyzes and discloses the significance of the CPHP's contribution to worsening existing water quality conditions. This legal obligation exists regardless of whether UC can single-handedly solve the problem.

UC argues that "[a]n EIR need not resolve existing environmental problems that will not be exacerbated by the project, which is the case here." (ROB 29:6.) The problem for UC is that the EIR admits the CPHP will *exacerbate* this environmental problem, generating about 0.18 million gallons per day (mgd) of new wastewater/sewage. (AR 2084.) The FEIR admits that the CPHP's beach water quality impacts could be significant. (AR 4062; 222-226; 5783-5788 [Master Response 12].) UC's lawyers cannot disavow these record facts in their brief.

> The audience to whom an EIR must communicate is not the reviewing court but the public and the government officials deciding on the project. That a party's briefs to the court may explain or supplement matters that are obscure or incomplete in the EIR, for example, is irrelevant, because the public and decision makers did not have the briefs available at the time the project was reviewed and approved.

(*Vineyard Area Citizens, supra,* 40 Cal.4th at 443.)

UC argues that the DEIR's description of the City plumbing system satisfies its obligation under CEQA to describe existing degraded beach water quality conditions. (ROB 29:23-30:12.) But the description provides no clue to the reader that beach water quality is routinely unhealthy for humans.

UC also relies on the FEIR's addition of new provisions to MM-HYD-1, "to control where it makes sewer connections for the campus site to the City's CSS system, and therefore, control the flows it would send to either the OSP or the SEP." (ROB 30:1.) This information was first provided in the FEIR's response to comments, too late in the process. (AR 5783-88.) It is critical to provide accurate setting information in the DEIR as a basis for impact analysis, so that the public can comment on impacts, the FEIR can respond, and the agency has the benefit of the process in making decisions. (POB 24-2; *San Joaquin Raptor/Wildlife Rescue Center. v. County. of Stanislaus* (1994) 27 Cal. App. 4th 713, 727; *Communities for a Better Env't v. City of Richmond* (2010) 184 Cal.App.4th 70, 89 [baseline required "at the beginning of the CEQA process"]; *Galante Vineyards v. Monterey Peninsula Water Mgmt. Dist*. (1997) 60 Cal.App.4th 1109, 1124 [tardy baseline disclosure not cured by later analysis].)

UC's citation to information in the FEIR supports the claim that the EIR must be recirculated in revised form. (POB 29-30). Also, the information that UC cites is part of an illegally deferred and unenforceable new mitigation measure. (POB 30-31.)

Regarding the Draft and Final EIRs' failures to describe the ineffective regulatory system for protecting beach water quality, UC argues that "the EIR extensively discusses the environmental and regulatory settings of beach water quality and analyzes Project impacts on beach water." (ROB 30:23.) This bald legal conclusion is unsupported by any record cites.

3. The EIR Relies on Ratio Theory and Other Regulatory Programs

UC argues, without citing any record evidence, that the EIR did not rely on the small ratio of the CPHP's incremental contribution to beach water pollution to conclude that the impact is less than significant. (ROB 31:3-18.) UC ignores the opening brief's point that the EIR concludes the CPHP's impact would be less than significant because the increase in the acreage of impervious surfaces *is only*

4% compared to the current acreage of impervious surfaces on campus. (POB 24:13, citing AR 1905-06.) UC's unsupported defense should be rejected.

UC also argues, again without citing record evidence, that the EIR did not rely on another agency's regulatory program to conclude that the CPHP's impact would be less than significant. (ROB 31:19-27.) UC argues that the case cites offered in the opening brief are inapposite because in those cases the agencies "skipped" environmental analysis. (ROB 31:19-27.) UC (i) does not contest the legal rule that an agency cannot rely on another agency's regulatory program to conclude that an impact is less than significant; (ii) does not cite record evidence that the CPHP EIR did not do so; and (iii) does not rebut the evidence cited in the opening brief that this EIR does, in fact, "skip" environmental analysis. UC's defense is thus unavailing.

4. The FEIR's Responses Require Recirculation of a Revised Draft EIR

UC incorrectly argues that the Court reviews all "recirculation claims" for substantial evidence. In fact, the petitioners' recirculation claim regarding water quality is reviewed de novo.

Recirculation is required when "significant new information" is omitted from a Draft EIR and added to a Final EIR. (Pub. Resources Code, § 21092.1[4]; Guidelines, § 15088.5(a).) In its seminal recirculation case, the California Supreme Court explained the central role of public participation through comment and response, holding that "public participation is an 'essential part of the CEQA process.'" (*Laurel Heights II, supra,* 6 Cal.4th 1112, 1123.) Recirculation is intended to permit public comment on new information and require agency responses. (Guidelines, § 15088.5 (f).) *Laurel Heights II* enumerated four categories of "significant new information" that require recirculation, now identified in Guidelines section 15088.5 (a)(1)-(4). (*Laurel Heights II, supra,* 6 Cal.4th at 1130 and n.15.) Petitioners seek recirculation under the fourth category, alleging significant new information disclosed after the DEIR was published "that the draft EIR was so fundamentally and basically inadequate and conclusory in nature that public comment on the draft was in effect meaningless." (*Id*. at 1130.)

Laurel Heights II recognizes that the fourth recirculation criterion is different from the first three:

> With the addition of the fourth category of 'triggering information' to the list, we recognize that 'significance' for purposes of section 21092.1 cannot be defined exclusively in terms of the grounds for recirculation found in section 21166, from which the first three categories are drawn. The different circumstances governed by these statutes mandate this conclusion.

[4] All cites to statutory authority are to the Public Resources Code unless otherwise stated.

(*Laurel Heights II*, 6 Cal.4th at 1130.) The fourth criterion is similar to whether an EIR's omission of essential information precludes informed decisionmaking and public participation. Supreme Court decisions hold that this question is reviewed de novo. (POB 14-15.) Reviewing a fourth criterion recirculation claim for substantial evidence as urged by UC is inconsistent with these decisions.

Moreover, *Laurel Heights II* held that determining the standard of review for a recirculation claim is case-specific: "We conclude that the substantial evidence standard set forth in section 21168.5 governs the Regents' decision not to recirculate the EIR in this case." (*Laurel Heights II*, 6 Cal.4th at 1135.) The recirculation dispute involved five sources of new information that clarified or confirmed matters already fully disclosed and analyzed in the Regent's informationally adequate EIR. (*Id*. at 1136.) *Laurel Heights II* addressed whether that information constituted "significant new information" under the first three criteria of Guideline section 15088.5. (*Id*. at 1137-1141.) Again, the claim here addresses omission of essential information regarding beach water, implicating the fourth criterion.

UC's reliance on *South County Citizens for Smart Growth v. County of Nevada* (2013) 221 Cal.App.4th 316, 330, is similarly misplaced, as it addresses a mitigation measure adding "significant new information" under the third criterion, at Guideline section 15088.5(a)(3) and does not address the arguments above. Appellate decisions are not authority for propositions not expressly considered. (*People ex rel. City of Santa Monica v. Gabriel* (2010) 186 Cal.App.4th 882, 891.)

Save Our Peninsula v. Monterey County Board of Supervisors (2001) 87 Cal.App.4th 99, 111, 114, 122-128 [water quantity], 112, 131-134 [water source] required recirculation of an EIR that belatedly disclosed baseline water use and recharacterized the water source as riparian. The Final EIR in *Sutter Sensible Planning, Inc. v. Board of Supervisors* (1981) 122 Cal.App.3d 813, 817-18 required recirculation as it included "a more elaborate discussion of groundwater availability and the projected impact of the plant on the water table" and substituted new "estimates of evapo-transpiration potentials ... for figures used in the previous EIR which were repudiated by their purported author." (*Id.,* at 817-18.) Here, the FEIR makes analogous setting description changes because it reverses field and admits that the CPHP could make degraded beach water quality worse.

5. The EIR Improperly Defers the Formulation of Mitigation Measures

UC defends the "deferred" mitigation claim by arguing that MM-HYD-1 will be "implemented before final design approval to reduce the Project's potentially significant impacts on beach water quality." (ROB 33:9.) This is irrelevant, because "[t]he delayed implementation of mitigation measures is a type of delay distinct from deferred formulation," (*King & Gardiner Farms, LLC v. County of Kern*

(2020) 45 Cal.App.5th 814, 860 (*King & Gardiner Farms*); *POET v. State Air Resources* Board (2013) 218 Cal.App.4th 681, 738.)

> UC argues that MM-HYD-1 includes these enforceable performance standards:
>
> (a) the stormwater runoff rate and volume from the CPHP shall not exceed predevelopment conditions for the 1- and 2-year, 24-hour design storm; and
>
> (b) that the total volume of stormwater discharges from Parnassus Heights in wet weather is decreased by an amount sufficient to offset flows from any increase in impervious surfaces and any increases in wastewater discharges as a result of the CPHP. (AR 6599-601; AR 222-24.)

(ROB 33:20.) UC is incorrect because both measures require additional analyses, *post-approval*, to determine "predevelopment conditions for the 1- and 2-year, 24-hour design storm" and the magnitude of the decrease in "total volume of stormwater discharges" required to fully offset increases in stormwater *and* wastewater discharges. The analyses may lead to enforceable performance standards at some point, but to defer the formulation of mitigation the EIR must provide enforceable performance standards before approval. This EIR fails that test. Moreover, MM-HYD-1 fails to meet the other requirements for deferring the formulation of mitigation, *i.e*., whether it is impracticable to develop mitigation during the CEQA process and there is evidence that future mitigation is feasible. (POB 30:2.)

D. The EIR Fails to Analyze Transit Delay Impacts

Petitioners explained that the EIR fails as an informational document because it does not analyze transit capacity impacts. (POB 31-34.) UC now asserts: "Substantial evidence supports UC's less than significant determination, and Petitioners have not met their burden to prove otherwise." (ROB 35.) This response is nonsensical because the EIR contends that transit capacity is not a CEQA issue and never made a significance determination that could be reviewed for substantial evidence. (AR 6120.) Whether transit capacity is within the scope of CEQA analysis is a question of law reviewed de novo. (*City of Marina v. Board of Trustees of California State University* (2006) 39 Cal.4th 341, 355 (*City of Marina*.)

1. The EIR was Required to Analyze Transit Delay

UC asserts that petitioners failed to address how delay in transit would conflict with other programs, plans, ordinances, or policies that address transit. (ROB 35:16-17.) That is untrue. Petitioners provided several citations to both San Francisco's Transportation Impact Analysis Guidelines and OPR's Technical Advisory on Evaluating Transportation Impacts in CEQA (OPR Technical Advisory). (POB 32-34.) Both provide directives that should be considered in the EIR. (Guidelines, § 15064.3 (a).)

When a lead agency is evaluating a project's transportation impacts, "Other relevant considerations may include the effects of the project on transit and non-motorized travel." (*Ibid*.)

UC misquotes the OPR Technical Advisory to argue that transit capacity is not a CEQA issue: "...that document states: 'increased ridership should not be considered an adverse effect, *even if it results in increased travel times*...' (ROB 36:10-12, italics added.) The Technical Advisory, however, does *not* include the above-italicized language. (AR 34406.) UC's attempt to insert this language into the quote falsifies OPR's guidance because the referenced paragraph is silent on whether increased transit delay is a project-level impact, and the next paragraph indicates that increased delay should be addressed as cumulative impact. (POB 33:11-15.) UC does not address OPR's assertion that increased transit delay may "cause a cumulative impact by requiring new or additional transit infrastructure." (AR 34406.)

The opening brief recites evidence in the record that demonstrates the need for additional analysis regarding transit. (POB 32:1-10.) UC responds by quoting the EIR Appendix: "With implementation of the CPHP, the campus site would have both more locations and capacity for passenger loading to occur," and that "loading supply for the campus site is expected to be greater than [transit loading] demand for most of the day." (ROB 35:13-16.) UC omits the remainder of the quote:

> [A]lthough passenger loading supply for the campus site is expected to be greater than demand for most of the day, there may be peak passenger travel periods where demand, either for the campus site overall, or for specific locations is greater than supply. During these periods there would be a higher chance of delay to transit or a reduction in access to transportation facilities.

(AR 3517.) The EIR Appendix does not refute that the CPHP would increase transit delay, much less that transit delay itself falls outside the scope of CEQA.

UC next cites Guidelines section 15064.3(b)(1) to argue that CPHP effects on transportation are presumed less than significant because it is within a half mile of "several major transit stops." (ROB 35:22-25.) This is irrelevant to whether transit capacity is within the scope of CEQA review. Also, any presumption provided by subdivision (b)(1) pertains to vehicle miles travelled (VMT), not the "effects of the project on transit," which is the issue here addressed in subdivision (a)(1). Finally, the Guideline provides only that this is "generally" the case. (Guidelines, § 15064.3 (b)(1).) If this presumption is applied uniformly, there would seldom be a need to address transportation impacts in the City, served extensively by public transit. City guidelines for analyzing transportation impacts under CEQA confirm this is not the case. (AR 980-1008.) They include impacts to transit delay as a CEQA issue. (AR 999.)

UC dismisses the import of the City's CEQA transportation guidelines, calling them "immaterial because the City is not the lead agency and UC is not subject to its thresholds." (ROB 36:6-7.) The statement is directly contrary to the EIR's representation that its transportation analysis is "[c]onsistent with the CEQA Guidelines and the SF Guidelines." (AR 4199.) Regardless, UC's refusal to establish a significance threshold for transit capacity impacts cannot allow its EIR process to ignore substantial evidence of an environmental impact. (*Amador Waterways, supra*, 116 Cal.App.4th at 1109.)

2. Transit Delay may Indirectly Impact Vehicle Miles Traveled

UC mischaracterizes petitioners' argument that impacts to transit capacity could create indirect impacts to VMT that remain unanalyzed. (POB 34:9-10.) UC provides several citations to the effect that the EIR analyzed VMT and substantial evidence supports the analysis. (ROB 37:2-3.) However, the EIR did not analyze transit capacity impacts, including potential increased transit capacity that would indirectly contribute to VMT. (AR 6120.) In fact, UC acknowledges that the EIR "assumed that 'the share of travel by public transit [would] remain the same or be slightly reduced from current levels.'" (ROB 37: 6-7.) Actual analysis of impacts on transit capacity could have required the EIR to abandon this assumption. (POB 33:26-34:10 [fair argument that transit delay from the CPHP may, in turn, increase VMT].) Thus, the EIR fails to analyze indirect impacts on VMT. (Guidelines, § 15126.2 (a).

E. The EIR Fails to Adequately Analyze and Mitigate Construction Noise Impacts

1. The EIR Fails to Adequately Address Potential Health Impacts

While construction of the CPHP would last three decades, UC argues that "occasional noise level of up to 76 dBA" would occur only "over several months of activity." (ROB 38:17-18.) UC's single-page AR citation provides no explanation. (AR 1960.) It is belied by UC's CalEEMod inputs, which assume 4.5 years of construction for the New Hospital (AR 2530), 3 years/10 months for the RAB (AR 2589-90), 11 months for Aldea Housing (AR 2502), and 9 months for the Irving Street Arrival (AR 2562). This translates to about ten years of construction for the "first phase" projected from March 2022 (AR 2562) to December 2029 (AR 2530). The EIR explains that "generally comparable" noise levels would occur for the next 20 years. (AR 1951-52). UC's claimed "several months of activity" is false.

UC claims that the EIR analyzed impacts of construction noise as "significant and unavoidable ..." (ROB 39:13-14.) But the four pages relied on do not discuss related human health impacts. (AR 1950-53.) Although the EIR was certified after the Supreme Court ruled in *Sierra Club v. County of Fresno* (2018) 6 Cal.5th 502 (*Sierra Club*) in 2018, discussion of health risks from construction noise is

in one paragraph that is detached from and plays no role in the significance determination for NOI-1. (AR 1960.) As in *Sierra Club*, the EIR provides a discussion of the human health impacts from noise levels, but fails to correlate those noise levels to project emissions for purposes of public disclosure or assessment of significance. UC's statement that its "EIR identifies the health impacts associated with noise caused by construction activities, the noise levels at which those health impacts may occur, and describes the noise levels associated with CPHP construction activities" is false. (ROB 40: 9-11.)

The EIR's failure to correlate noise to health impacts is demonstrated by two simple questions:

(i) What noise levels and exposure periods are associated with "decreased performance of cognitive tasks" or "physiological effects such as hypertension and heart disease"? (ROB 39:20-23.)

(ii) If "few people are seriously annoyed by activities with noise level below 55 dBA," (ROB 39:25-26), what level causes most people to be annoyed?

These questions are critical since residents would be exposed to many years of construction noise at levels up to 80 dBA. (AR 1956.) The EIR fails to provide answers. (*Laurel Heights I, supra,* 47 Cal.3d at 405 [requiring "detail sufficient to enable those who did not participate in its preparation to understand"].) Rather than addressing likely health impacts at lower noise levels, the EIR focuses on "pain and hearing damage" that result at "120dB and 140 dB respectively." (AR 1960.) The EIR also fails to consider if hypertension, heart disease, decreased performance of cognitive tasks, and serious annoyance would constitute significant impacts. (*Amador Waterways, supra*, Cal.App.4th at 1108–09.)

UC argues that the EIR's analysis is saved as it "applies the standards established in the City's Police Code and General Plan...and the daytime construction noise criteria of the Federal Transit Administration." (ROB 38:19-21.) However, neither the City's noise ordinance (AR 31234-82) nor the FTA manual (AR 32212-27) indicate that their respective standards consider health impacts or correlate noise levels to health risks. Further, as explained below, the EIR does not apply these standards.

2. Mitigation for Construction Noise is Inadequate

UC first argues that MM NOI-1b "commits UC to restricted hours," and then acknowledges that MM NOI-1b allows exceptions. (ROB 40:24-27.) While it would minimize the exceptions to "rare circumstances ... such as large concrete pours," NOI-1c provides no limitation. (AR 1476, 1953.) "Rare circumstances" are defined neither as to their nature or the frequency of occurrence. (*Ibid*.)

UC next argues that "there is nothing vague about 'restricting work to smaller time windows, condensing the overall duration of nighttime work to the degree feasible, and erecting temporary barriers

to shield the short-term nighttime activity.'" (ROB 41:2-4.) Although quoted in the opening brief, UC ignores *King & Gardiner Farms, supra*, 45 Cal.App.5th at 858, which explains that the "terms 'increase' and 'reduce'— even though preceded by the mandatory term 'shall' and modified by the phrase 'to the extent feasible'— are not specific performance standards." UC provides no definition or performance standard for "smaller time windows" or "condensing the overall duration" of nighttime construction. Similarly, MM NOI-1b provides no standard for either the design of the "temporary barriers" or the performance of their noise shield.

Finally, UC points to "a *program*-level analysis and mitigation measures," requiring preparation of a future "Noise Control Plan." (ROB, 41:10-15.) This does not cure the defective *project*-level analysis and mitigation for the CPHP's "initial phase" construction. (AR 1948.) Further, any future "noise control plans" are to be approved "by UCSF" and not a regulatory agency, if construction noise "is consistent with the standards set forth in the City's Noise Ordinance." (AR1952.) The EIR's conspicuous use of the phrase "consistent with" appears shorthand for disclaiming commitment to comply with the City's standard, as the EIR explains: "Although UCSF is not subject to the noise ordinance, it *strives* to be consistent with it to the extent feasible." (AR 1530, italics added.) Generalized admonitions to operate more quietly "where feasible" or "wherever possible" are inadequate mitigation. (*Sierra Watch v. County of Placer* (2021) 69 Cal.App.5th 86, 110.) "This language, in effect, only tells construction contractors to be quieter than normal when they can. Although that may be good neighborly advice, it is not sufficient as a mitigation measure." (*Ibid*.) The same is true here, where neighbors would be exposed to significant construction noise over decades.

F. The EIR Fails to Adequately Analyze Historic Resource Impacts

1. UC Cannot Approve Demolition Based on a 'Policy Decision'

UC argues that it has discretion to find that retaining one or more historic buildings is infeasible based solely on a "policy decision." (ROB 41:20-42:26.) UC relies on *Sacramento Old City Association v. City Council* (1991) 229 Cal.App.3d 1011, 1018 (*SOCA*) for the proposition that courts must not "substitute their own opinions as to what constitutes wise public policy." Yet *SOCA* was generally discussing the substantial evidence standard for agency findings, not whether otherwise-feasible mitigations or alternatives to reduce significant impacts can be ignored based on declared 'public policy." (*Ibid*.) Under UC's view, any agency could approve demolition of historic resources by stating a policy preference for new versus historic buildings. That is assuredly not a proper CEQA interpretation

of "feasibility," and it is inappropriate here where UC has substantial properties in the City, unsupported verification of space needs, and great flexibility as to where to locate research and hospital facilities.

Feasibility is a question of fact, not "policy." UC's finding that avoidance of demolition is infeasible is not supported by substantial evidence. The finding must turn on facts as to whether the project could be accomplished with the identified mitigations or alternatives. (POB 19:8.) The historic resources at Parnassus are capable of being rehabilitated, as UC conceded in its 2014 Plan and EIR.

CEQA's "substantive mandate" requires that an agency not approve a project "as proposed if there are feasible alternatives or mitigation measures that would avoid or substantially lessen the adverse environmental effects." (*Stockton Citizens for Sensible Planning v. City of Stockton* (2010), 48 Cal.4th 481, 498; Guidelines, § 15092(b)(2)(A); POB 66:17.) UC unlawfully ignores the substantive mandate, contending that its policy decision to change land uses at Parnassus led it to consider and reject several alternatives that would have retained one or more historic buildings, and that is enough. (ROB, 42:2-21.)

As the California Supreme Court held in *City of Marina*, *supra*, 39 Cal.4th at 368-69, an agency cannot "proceed with a project that will have significant, unmitigated effects on the environment, based simply on a weighing of those effects against the project's benefits, unless the measures necessary to mitigate those effects are truly infeasible." Policy and public benefit considerations do not arise in determinations of feasibility, but only when an agency approves a project because its overriding benefits render *unavoidable* significant impacts "acceptable." (Guidelines, § 15093.)

2. The DEIR Fails to Evaluate the Campus as a Historic District or Area

UC contends that "the EIR has sufficient detail to provide an informed reader with the background necessary to understand (1) the *historic resources* that were evaluated, (2) those that may be present and were not evaluated before publication of the EIR, and (3) potential impacts of the CPHP." (ROB 19, italics added.) However, the only *historic resources* that the Draft EIR evaluated were individual buildings, plazas, and murals. The campus was not evaluated as a unified *historic resource* in its own right as a "historic district" or "historic area." (POB 41:16-21.) This is important because a substantial alteration to a historic district as a whole has a separate significant impact for which mitigations and alternatives must be identified and applied.

In response to comments, the FEIR contends but provides no supporting facts that the EIR adequately evaluates the campus as a historic district. (POB 41:22-27.) UC points to a sentence in Carey & Co.'s 2011 report suggesting that the possibility of a historic district at the Parnassus campus was considered but that the researchers "*did not find sufficient evidence* to identify an historic district." (ROB

43:24-44:5, italics in original.) Yet the only relevant reference in the report is a "negative pregnant" — an inference — because Carey & Co. surveyed all UCSF campuses for historic resources and *reported* only one potential historic district at Third Avenue. (AR 40134.)

Carey & Co. does not offer a word of explanation as to whether the Parnassus campus is or is not a potential "historic district" or "historic area." An inference that the issue was evaluated does not meet CEQA's requirements for public disclosure. Even where an EIR's environmental conclusion is correct, "there must be a disclosure of the 'analytic route the ... agency traveled from evidence to action.'" (*Sierra Club, supra,* 6 Cal.5th at 513, quoting *Laurel Heights I, supra*, 47 Cal.3d at 404 and *Topanga Assn. for a Scenic Community v. County of Los Angeles* (1974) 11 Cal.3d 506, 515.)

Moreover, while the 2011 Carey & Co. report is cited in the DEIR (AR 1757), it is not part of the EIR or attached as an appendix. "The data in an EIR must not only be sufficient in quantity, it must be presented in a manner calculated to adequately inform the public and decision makers... '[I]nformation scattered here and there in EIR appendices' or a report 'buried in an appendix,' is not a substitute for 'a good faith reasoned analysis.'" (*Vineyard Area Citizens, supra*, 40 Cal.4th at 442.) The EIR's failure to evaluate the whole campus as a potential historic resource fails to satisfy CEQA mandates for public disclosure and evaluation of impacts and feasible mitigation.

G. The EIR Fails to Adequately Assess Impacts from Air Emissions

1. The EIR Piecemeals Analysis of Health Impacts from TAC Emissions

The EIR piecemeals its analysis of human health impacts from TAC emissions to minimize significant impacts on neighbors' cancer risk. The critical issues are: (i) whether construction and operational TAC emissions should be segregated for EIR analysis, and (ii) whether the project-level significance threshold of 10 increased cancer risks applies rather than a cumulative threshold of 100.

(a) The EIR Fails to Address Cancer Risks from all TAC Emissions

In response to expert testimony and guidance from the California Office of Environmental Health Hazard Assessment (OEHHA) stating that a health risk assessment should include both construction and operational TAC emissions, UC pronounces a "disagreement among experts" as if that allows it to freely rely on its own methodology to determine whether cancer risks are significant. (ROB 47: 22-28.) UC fails, however, to identify any expert support for the EIR's methodology of segregating

health risks from TAC emissions. (ROB 47:26.)[5] BAAQMD's guidance is in accord with OEHHA, and provides in that "Some proposed projects would include both permitted and non-permitted TAC sources. For instance, a manufacturing facility may include some permitted stationary sources and also attract a high volume of diesel trucks and/or include a rail yard. *All sources should be accounted for* in the analysis." (AR 15733, italics added.) UC's failure to identify any expert support for its competing "methodology" is fatal to its defense.

This is not an issue of "competing experts" that entitles UC to deference. The EIR's failure to account for mobile-source TAC emissions for the entire CPHP, or any operational emissions from the New Hospital, is based on a legal posture that "future projects…will undergo separate review" rather than any identifiable expert evidence. (POB 43:19-23.) The opening brief responds directly[6] to UC's legal position, explaining that EIR analysis cannot be deferred where, as here, the record includes sufficient information allowing study of an impact. (POB, 43:24-44:9.) UC ignores this argument, including the opening brief's discussion of mobile-source diesel emissions and New Hospital operational emissions that were available for calculation of resulting TAC emissions. (ROB 5-48.)

(b) The CPHP is a Single Project for Purposes of CEQA Analysis

The opening brief explains that the EIR minimized TAC health risks by treating each infrastructure element of the CPHP as a separate CEQA project, and even purported to distinguish construction and operational TAC emissions. (POB 44:9-19.) UC's only discernible response is that "the only overlap between construction emissions and operational emissions would be cumulative ... because emissions from operations (generators and vehicles) cannot occur until construction of a building is complete." (ROB 47:8-11.)[7]

That operational emissions occur later than construction emissions means that they are "serial" or "consecutive," but not that they are "cumulative." It is absurd to suggest that construction of a building somehow has independent utility from operation of the same building. (*Banning Ranch Conservancy v. City of Newport Beach* (2012) 211 Cal.App.4th 1209, 1223.) While UC now ignores this

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[5] UC cites a single page from the record supporting its assertion, and that page is unrelated to TAC emissions. (AR 6979.) The FEIR's response to PNC's expert references no expert analysis or evidence supporting UC's methodology. (AR 6012-13.)

[6] UC falsely asserts that "Petitioners . . . ignore that the EIR indicates that the New Hospital and Future Phase Projects will undergo separate environmental review." (ROB 47:18- 19)

[7] UC concedes that these different buildings have no independent utility in its recitation of the "interrelated sequence of projects." (ROB 16:2-13.)

point, the record is replete with evidence that the EIR consistently treated the CPHP as a single project. (See, e.g. AR 1647, 1659 [criteria air emissions], 1786-1787 [energy], 2050 [transportation].) In any event, the scope of a project under CEQA is a legal question for the Court without deference to the lead agency. (*Stopthemillenniumhollywood.com v. City of Los Angele*s (2019) 39 Cal.App.5th 1, 15.) The EIR's unique approach to piecemeal the CPHP's various TAC emission sources in this manner unlawfully minimizes the CPHP's significant cancer risk impacts on UC's neighbors.

2. The EIR Incorrectly Applies Cancer Risk Thresholds of Significance

UC first argues, incorrectly, that the claims arising from the EIR's erroneous use of cancer risk thresholds of significance were not exhausted in the administrative process. (ROB 48:16.) They were exhausted by comments (POB, 45:28; 51:28, citing AR 890-96, 898-944, 6069-74, 5862-64; 5903-06; 5913-18; 6137-43) and the Final EIR responded. (AR 6076-6083.)

UC argues that it and other agencies have used the same cancer risk thresholds for years. (ROB 48:21.) This is irrelevant. The EIR failed to apply these thresholds to the environmental baseline established in the EIR to determine significance. Instead, it applies the thresholds without regard to the magnitude of baseline cancer risk. Also, there is no record evidence that UC and other agencies in fact have applied the thresholds in this manner for years. Even if they had, repeating a legal error would not make it legally correct. The emperor repeatedly parading without clothes remains naked.

(a) UC Failed to Adopt Its Thresholds in a Public Rule-Making Process

UC fails to defend this claim argued at POB 45:4. Judgment and a writ should issue.

(b) The EIR Fails to Adequately Describe Existing Cancer Risk Conditions

UC defends the EIR's use of the 100 in one million cancer risk criterion by arguing that "the predicted existing risk levels attributable solely to diesel particulate matter (DPM) are not a factor in the impact assessment of the EIR." (ROB 49:8.) This argument has three flaws. First, the idea that "existing risk levels are not a factor in the impact assessment" is contrary to CEQA case law requiring that the project-caused impact (increased risk) be added to existing conditions (existing risk). (POB 46:17-27.) Second, UC's argument implies that the EIR is exempt from CEQA's requirement to describe baseline conditions as of the Notice of Preparation date. UC cites no authority, and there is none. Third, UC's assertion that existing risks "attributable solely to DPM are not a factor in the impact assessment of the EIR" is a red herring. The claim is that existing risks attributable to both DPM and TAC are a factor in the impact assessment and need to be described in the EIR.

(c) The EIR inadequately analyzes Project and Cumulative Cancer Risk

The EIR's rationale for applying BAQMD's project-level and cumulative cancer risks thresholds were addressed in the opening brief. (ROB 49:14-50:25; POB 46:9-51:14.) UC now pronounces that "Petitioners' argument that the significance threshold should account for the existing baseline cancer risk would require virtually every CEQA project to prepare an EIR ... because the ambient risk exceeds the standard of significance; it would be absurd for CEQA to require this result." (ROB 50:25-28.)

UC thus concedes the gravamen of petitioners' claim, that in finding the CPHP's project-level and cumulative cancer risk to be less-than-significant, the EIR applied BAAQMD's thresholds in a manner that ignores the baseline's severely adverse cancer risk conditions. UC argues that "BAAQMD's threshold ... also does not require that existing background emissions be considered in evaluating the significance of a project's incremental emissions." (ROB 50:21.) Assuming arguendo that this is correct, it is unavailing since BAAQMD has no more license to ignore CEQA's requirements than does UC.

Moreover, under UC's approach there is no upper limit to air pollution that would require an agency to find that a project's impact is significant, because as long as each project stays under the 10 per million threshold, air could become unbreathable without a finding that any project would have a significant impact. CEQA does not allow such "creeping incrementalism" to remain undisclosed.

Instead of explaining why this approach does not violate CEQA, which it does (POB 46:9-51:14), UC makes a policy argument that courts should recognize an exception, implying that otherwise every project that would increase cancer risk above a preexisting severely degraded baseline would have a significant adverse effect, thereby necessitating the preparation of an EIR. UC's parade of horribles is incorrect and addressed to the wrong branch of government. It is incorrect because a lead agency's legal obligation is to determine if an increase in cancer risk is individually significant or "cumulatively considerable." (Guidelines, §§ 15065(a)(3); 15130(a); 15355; *CBE v. Resources, supra*, 103 Cal.App.4th at 120 [the 'one [additional] molecule rule' is not the law"].) The EIR *must explain*, based on facts rather than policy and what other agencies say, why worsening severely degraded conditions is individually significant or "cumulatively considerable." The EIR fails to do so.

UC's policy argument is overblown because CEQA has many exemptions for projects in urban areas even if they may worsen poor air quality. (§§ 21080.42; 21081.2; 21155.1; 21155.11; 21159.21; Guidelines, §§ 15301-15304; 15322.) UC's policy argument is addressed to the wrong branch of government because the Court may not rewrite a statute to suit UC's desire.

UC also generally argues that a 47-page technical document (AR 16491-537) not included in the EIR finds that the Parnassus campus is not in an Air Pollutant Exposure Zone (APEZ.) (ROB 51:1-9.) UC does not explain why this is relevant. Regardless, the EIR fails to disclose why worsening severely degraded ambient risk (conceded as above 100 in one million) is not individually significant or cumulatively considerable. (*Vineyard Area Citizens, supra*, 40 Cal.4th at 442 ["[I]nformation 'scattered here and there in EIR appendices' or a report 'buried in an appendix,' is not a substitute for 'a good faith reasoned analysis'"]; 443 ["That a party's briefs to the court may explain or supplement matters that are obscure or incomplete in the EIR, for example, is irrelevant"].)

Regarding cumulative cancer risk, UC relies on the FEIR's response, that BAAQMD directs that a project would have a cumulatively considerable impact if all sources within a 1,000-foot radius plus the project exceeds an excess cancer risk level of more than 100 in one million. (ROB 51:20.) The response is inadequate. (POB 51:7-14.) The math is simple. Baseline risk in the area studied is above 100 in one million. The project would make that worse regardless of how far receptors are from sources of pollution or whether the CPHP "excess risk" exceeds another 100 in one million. Whether other agencies find that "acceptable" is not a relevant or legal basis to find the impact less than significant.

H. The EIR Inadequately Analyzes Visual Impacts

1. The EIR's Analysis of Impacts AES-1 and -2 Omits Essential Information

With two caveats, the opening brief fully anticipates UC's opposition regarding the validity of the EIR's analysis of Impacts AES-1 and AES-2. Those arguments are not repeated here. (POB 51-54.) UC repeats the EIR's unfounded assertion that it can reduce significant impacts by changing the baseline, in this case by amending the LRDP's regulations that minimize such impacts. (POB 52:1-19.)

UC's only new argument is to claim disagreement that "the threshold of significance should be changed to 'visual impacts as perceived from surrounding neighborhoods' rather than the selected criterion listed in Appendix G." (ROB 53:25, n.16.) UC misconceives the claim. It is not that a threshold of significance should be "changed," but that the EIR must assess the impact because otherwise it commits legal error by deploying its thresholds of significance to foreclose consideration of substantial evidence supporting a fair argument of significant impact. (POB 52:20.)

2. UC Erroneously Relies on Public Resources Code Section 21099

UC's discussion of the section 21099 exemption for aesthetic impacts fails to interpret CEQA "in such manner as to afford the fullest possible protection to the environment within the reasonable

scope of the statutory language.'" (*Laurel Heights I, supra,* 47 Cal.3d at 390.) Also, exemptions from CEQA "are narrowly construed." (*San Lorenzo Valley Community Advocates for Responsible Education v. San Lorenzo Valley Unified School Dist.* (2006) 139 Cal.App.4th 1356, 1382.)

UC's argument that the definition of "residential or mixed-use residential project" in section 21159.28 (d) does not provide guidance for defining these terms in section 21099 ignores their common parentage. Section 21099 was enacted to encourage transit-oriented, infill development to reduce greenhouse gases announced in Senate Bill No. 375, "one in a series of executive, legislative and administrative measures enacted to reduce greenhouse gas emissions ..." (*Covina Residents for Responsible Development v. City of Covina* (2018) 21 Cal.App.5th 712, 725) Section 21159.28 was enacted pursuant to Senate Bill 375. Since both statutes were enacted to further goals of SB 375, the provisions should be read *in pari materia*. (*Smith v. LoanMe, Inc.* (2021) 11 Cal.5th 183, 190.) Thus, section 21099's CEQA exemption for aesthetic impacts attributable to a residential or mixed-use project cannot reasonably be interpreted to apply to this EIR.

I. The EIR Defers Formulating Mitigation for Biological and Visual Impacts

UC denies that the EIR improperly defers formulation of mitigation measures MM BIO-2b and MM AES-3, treating it as a challenge to whether the EIR's conclusion that impacts will be less than significant is supported by substantial evidence. UC misconceives the nature of the claim, which is a procedural challenge to the EIR's assumption that it meets criteria for deferral. "The existence of substantial evidence ... is not relevant when one is assessing a violation of [CEQA's] information disclosure provisions." (*Communities for a Better Env't v. Richmond, supra*, 184 Cal.App.4th at 82.

J. The EIR Fails to Assess Shadow Impacts on Surrounding Neighborhoods

UC incorrectly argues that "[a]nalysis of shadow impacts is not required under CEQA." (ROB 57:18, citing Guidelines, Appendix G.) This argument is incorrect because CEQA requires analysis of all project-caused physical changes to the environment (§§ 21100, 21002.1, 21065) and loss of sunlight is unquestionably a physical change. Also, the fact that Appendix G does not mention "shadow" is irrelevant; its preamble expressly provides that "[s]ubstantial evidence of impacts not listed on this form must also be considered."

As with visual impacts, UC misconceives the issue. It is not that a threshold of significance should be "changed" but that the EIR unlawfully fails to analyze the significance of shadow impacts on

neighborhood life outside of city parks despite substantial evidence supporting a fair argument that such impacts may be significant. (*Amador Waterways, supra*, 116 Cal.App.4th at 1109.)

K. Deferral of Formulation of Mitigation for Significant Wind Impacts is Unlawful

UC implies that labeling the CPHP EIR a "program" EIR gives it a free pass to defer the formulation of mitigation for significant wind impacts. This is incorrect. The level of specificity for a program EIR is determined by the nature of the project and the 'rule of reason' and not by semantic labels. (*Citizens for a Sustainable Treasure Island v. City and County of San* Francisco (2014) 227 Cal.App.4th 1036, 1052.) A program EIR must provide "decision makers with sufficient analysis to intelligently consider the environmental consequences of [the] project." (*Ibid*; *Cleveland National Forest Foundation v. San Diego Ass'n of Governments* (2017) 17 Cal.App.5th 413, 426 (*Cleveland*).)

UC ignores extensive authority in the opening brief addressing the EIR's improper deferral of the formulation of mitigation for significant wind impacts. (POB 30; 36:25; 57:9 ["As discussed, to defer mitigation until after project approval it must be impracticable to achieve in the present and the agency must adopt performance standards. UC violates both criteria for deferral."].) The opening brief did not repeat these citations for each mitigation deferral claim.

UC's defense consists mostly of undisputed points. For example, the parties assume that wind tunnel testing is required for accurate prediction of wind speeds and that final building designs are necessary for accurate wind tunnel tests. Petitioners' claim is that the EIR presents no evidence that it is impractical for UC to develop final building designs before approving the CPHP; thus allowing wind tunnel testing. UC ignores this claim and cites to no such evidence.

Similarly, UC argues that MM AES-4 includes a specific performance criterion, *i.e*., San Francisco's wind hazard threshold of 26 mph. Petitioners do not dispute that MM AES-4 references this criterion. The legal problem is that MM AES-4 does not mandate compliance with this criterion. (POB 58:12; *Cleveland, supra*, 17 Cal.App.5th at 440-443 ["[i]mpermissible deferral of mitigation measures occurs when an EIR puts off analysis or orders a report without either setting standards or demonstrating how the impact can be mitigated in the manner described in the EIR"]. UC fails to defend this claim.

UC argues that MM AES-4 does not use an incorrect, post-project baseline to determine the success of wind mitigation, contending that the "baseline" under CEQA has nothing to do with measuring the success of mitigation. (ROB, 60:15; POB 59:6.) This reflects a deep misunderstanding of how CEQA works. The environmental setting (i.e., pre-project baseline) is the condition of the

environment against which an EIR evaluates project changes for environmental harm. (*Communities, supra*, 48 Cal.4th at 315). For purposes of measuring the success of mitigation, changing the baseline to reflect conditions after portions of the project are built could partially or completely obscure the magnitude of the change caused by the project. The updated baseline would reflect more degraded environmental conditions than the pre-project baseline. The Court should reject UC's absurd argument.

L. GHG Emissions must be Analyzed and Mitigated

UC relies heavily on the purchase of voluntary carbon offsets to support the EIR's determination that greenhouse gas (GHG) emissions would be less than significant. (AR 1854-55 [UC to purchase roughly 59,000 metric tons of CO_{2e} a year, approximately 95 percent of the increased emissions from the buildout of the CPHP].) UC relies on this strategy because it is less expensive than lowering emissions. (AR 42215.) But UC's proposed voluntary offsets fail to meet CEQA's requirements that mitigation measures be "fully enforceable through permit conditions, agreements, or other legally binding instruments." (Guidelines, § 15126.4 (a)(2).)

UC first argues that *Golden Door Properties, LLC v. County of San Diego* (2020) 50 Cal.App.5th 467 (*Golden Door*) is limited to its facts and should not be relied upon. (ROB 62:1-4, 14-15.) *Golden Door* states, "Our decision is not intended to be, and should not be construed as blanket prohibition on using carbon offsets — even those originating outside of California — to mitigate GHG emissions under CEQA." (*Id*. at 483.) UC overreaches, as *Golden Door*'s limiting language reflects adherence to the principle of judicial restraint. The practice of distinguishing one case from another is based on the assumption that appellate rulings are limited to the facts of each case. But petitioners' claim is not premised, as UC states, on a "blanket prohibition on using offsets." Far from it, the material facts in *Golden Door* are substantively identical to the instant case and compel the same outcome.

UC argues that *Golden Door* is distinguishable because "MM GHG-1c commits UC to monitoring emissions annually and acquiring carbon offset credits in conformance with CARB guidance." (ROB 62:16-19.) UC fails to explain what is meant by "offset credits in conformance with CARB guidance." It cites only three pages from the EIR to support this assertion, and the only possible interpretation from them is that "Offset credits shall be third-party verified by a major registry recognized by CARB ... UCSF will purchase CARB conforming national offset credits registered with an approved registry." (AR 1858.) UC fails to acknowledge that CARB approval is rejected as a basis for enforceability. (*Golden Door, supra,* 50 Cal.App.5th at 511.) Further, UC relies on the same

registries as the agency in *Golden Door*. (Compare AR1858-1859 [discussion of CPHP's voluntary carbon offset registries] with *Golden Door*, *supra*, 50 Cal.App.5th at 570-571 [discussion of registries].)

UC next argues that MM-GHG-1c is distinguishable from *Golden Door* because the EIR mentions the use of protocols whereas the mitigation measure in *Golden Door* does not. (ROB 62:23-27.) This simplistic argument is unavailing because UC *fails to require CARB approval for the protocols*, which is necessary for enforceability. (AR 1859.) MM-GHG-1c only requires that "protocols of each registry, and UC's own internal screens, shall be used to demonstrate that the carbon offset credits provided are real, permanent, additional, and have been independently verified as adhering to its applicable project protocols." (*Ibid*.) This is inadequate, as *Golden Door* explains:

> [R]egardless of how the voluntary protocols are developed, [C]ARB staff must determine whether the voluntary protocol should be developed for use in the Cap-and-Trade Program and if so, to conduct its own rulemaking process.... *This process ensures that any voluntary protocol ... demonstrates the resulting reductions meet the offset criteria in [Assem. Bill No. 32] ...* Protocols developed by the voluntary programs are not Compliance Offset Protocols." (Italics added.)

(*Golden Door*, *supra*, 50 Cal.App.5th at 511-12.)

As in *Golden Door*, UC fails to require CARB approval for these protocols, or information regarding the protocols. (AR 1859.) Without additional requirements, MM-GHG-1c is unenforceable. The similarities to *Golden Door* are striking and compel the same result.

1. MM-GHG-1c is Impermissibly Deferred

There are two ways in which MM-GHG-1 is impermissibly deferred. First, offset protocols are undefined. (POB 61:1-5.) Second, offset locations are unspecified. (*Ibid*.) UC states that voluntary offsets would "prioritize" local and in-state offsets and, if no such offsets are "available," UC would purchase out-of-state offsets. (ROB 63:3-11.) *Golden Door* found the mitigation measure impermissibly deferred where it "contains no objective standards for determining whether any particular offset project is 'available' and 'financially feasible' in one location or another." (*Golden Door, supra*, 50 Cal.App.5th at 520.) As in *Golden Door*, UC fails to identify any objective standard for when local or in-state offsets are "available." (ROB 63:4–11.) Apparently attempting to distinguish *Golden Door*, UC states in a footnote that "it is not possible or feasible to specify exactly where future credits will be obtained." (ROB 63:27 fn. 22.) UC fails to explain, however, why requiring an objective standard for "availability" would be equivalent to "specify[ing] exactly where future credits will be obtained." Again, the facts here are substantively identical to *Golden Door*, and compel the same finding of improper deferral.

2. The EIR Relies on the CARB 2017 Scoping Plan to Analyze GHG Impacts

There are two flaws in the CPHP's use of the CARB's 2017 Scoping Plan. First, the 2017 Scoping Plan standard relied upon is not applicable to the UC. (POB 62:10-13.) Second, the CPHP's reliance on "zero net increase" conflicts with UC's own policies. (POB 61:21-62:6.)

In lieu of properly analyzing this conflict as required by CEQA, UC provides a handful of excerpts from the EIR that purport to show that the CPHP is consistent with "UC plans and policies, 2040 Plan Bay Area, CARB's 2017 Scoping Plan Updated, and Executive Order S-3-05." (ROB 63:16-18.) However, UC provides no explanation as to how the CPHP's goal of "no net increase" is consistent with state mandates for emission decreases.

UC's opposition concludes by stating "Petitioners ignore that UC's CNI [Carbon Neutrality Initiative] is more stringent than all state requirements for reduction of GHG emissions, including AB 32, SB 32, and 2017 Scoping Plan." (ROB 64:3-4.) UC's claim is false. The CNI is a carbon neutrality goal that is only half-heartedly entered into by the UC, and bears no relationship to state goals. (AR 41069 [noting that UC is not on track to meet its carbon neutrality goals by 2025].) Further, UC's opposition does not even attempt to argue how the 2017 Scoping Plan's guidance to cities and counties is applicable to UC as a state entity. UC has failed to adequately analyze how implementation of the CPHP is consistent with an applicable plan, policy, or regulation.

M. The EIR fails to Adequately Analyze Energy Conservation

1. Project Level Analysis Fails to Comply with Informational Mandates

A main focus of UC's arguments is to avoid applicable language in the CEQA Guidelines' Appendix F. UC attempts to brush aside a critical element of Appendix F by stating that "Petitioners' argument weakly relies on the aspirational goals listed in the introduction to Appendix F, all of which are still met by the EIR." (ROB 64:15-16.) First, this ignores "the fundamental rule of statutory construction which states that the court should ascertain the intent of the Legislature to best effectuate the purpose of the law. [Citation.] Legislative intent should be gathered from the whole act and applied reasonably to carry out the policy of the legislation. [Citation.]" (*Estate of Coudures* (1984) 151 Cal.App.3d 741, 746.)

The task is eased because Appendix F's policy is expressly stated: "The goal of conserving energy implies the wise and efficient use of energy. The means of achieving this goal include: [¶] (1) decreasing overall per capita energy consumption, [¶] (2) decreasing reliance on fossil fuels such as

coal, natural gas and oil, and [¶] (3) increasing reliance on renewable energy sources." (Guidelines, App. F, § I.) *California Clean Energy Committee v. City of Woodland* (2014) 225 Cal.App.4th 173, 213 (*CCEC*) quoted this Appendix F language to invalidate an EIR that did "not indicate any investigation into renewable energy options that might be available or appropriate for the project." Here, the EIR fails to describe how the CPHP complies with any of the prescribed means to achieve energy conservation: the UC is increasing its reliance on fossil fuels, fails to assess whether its per capita energy consumption is increasing, and fails to require any increased renewable energy in favor of purchasing offsets.

Dismissing these fundamental issues, UC asserts that "CPHP will add about 2.90 million gsf of new building space and thus has to use more energy than the existing 3.92 million gsf of building space." (ROB 64:18-19.) UC fails to explain why this 74 percent increase in building space requires a 116 percent increase in electricity use, 76 percent increase in diesel use, and 61 percent increase in natural gas use. (AR 1779.) These increases suggest that CPHP development would be less energy efficient than the existing campus. (*Ibid*.) While it is possible that a per-capita energy consumption analysis pursuant to Appendix F, section I ("decreasing overall per capita energy consumption") might help explain this troublesome lack of energy efficiency, UC defiantly refuses to perform such analysis. (ROB, 65:11.) This is an informational failure under Guidelines section 15126.2 and Appendix F.

In an attempt to pivot from its excessive unexplained increases in energy consumption, UC points to Title 24 and LEED certifications to posit that "fossil fuel consumption would be reduced." (ROB 65:13.) However, the assumed "reduction" is illusory — both in terms of absolute numbers and in relation to the proposed increased building space. (AR 1779.)

UC expends much effort explaining how "UC is increasing renewable energy sources at all of its locations, including Parnassus Heights," referencing prior actions and contemplated future strategies actions that are neither elements of nor mitigation for the CPHP. (ROB 65:16-26.) Impacts from such unrelated projects are irrelevant, and information scattered about the record does not satisfy the EIR's informational disclosure requirements. (*Vineyard Area Citizens, supra,* 40 Cal.4th 412, 442.)

UC boasts that "the campus is developing *strategies* for adding new renewable generation including rooftop solar systems, and microgrid districts with battery storage." (ROB 65:24-25.) First, developing strategies to apply at some undefined date does not show a "decreas[ed] reliance on fossil fuels." (Guidelines, App. F, § I; AR 35130 ["Renovations and upgrades are recommended across many existing electrical facilities in the next 15 years to maintain business-as-usual operations"].) Second, the

CUP is scheduled "to remain in good operation until 2030-2035." (AR 35131.) UC fails to provide any performance standards to reduce reliance on fossil fuels, a primary path to achieve energy conservation.

UC's brief relies heavily on its goal to meet Title 24 and strive to achieve LEED Silver for new buildings, but does not dispute that these goals may be waived. (POB 65:1-6; ROB 64:21-24; 64:27-65:2 [claiming waivers would be limited to "exceptional circumstances"].) UC also relies on *Tracy First v. City of Tracy* (2009) 177 Cal.App.4th 912*,* to argue that reliance on building codes is sufficient to address energy impact concerns. (ROB 65:27-28, 66:1-4.) However, as in *CCEC*, UC here fails to provide any analysis regarding the other factors CEQA requires in addition to building code compliance. (*CCEC, supra*, 225 Cal.App.4th at 211; Guidelines, § 15126.2 (b).) It is thus impossible to determine whether changing certain aspects of the project would create a more efficient or less wasteful CPHP.

2. Cumulative Energy Impacts Analysis is Fatally Flawed

CEQA prohibits "drop in the bucket" or "ratio theory" analysis. (*San Francisco Baykeeper v. State Lands Comm.* (2015) 242 Cal.App.4th 202, 223.) UC argues that it only provides comparison to "statewide and regional energy use to provide a frame of reference." (ROB 66:21-23.) This attempted whitewash fails. The EIR dismisses cumulative energy impacts because "given the relatively small percentage of the CPHP's other fuel and energy uses compared to existing fuel and energy use in the region," there would be no adverse cumulative impacts. (AR 3944.) The EIR found a less than cumulatively considerable impact because electricity use would not be "substantial compared to 2018 citywide consumption." (AR 3944.) This is the hallmark of ineffective "drop in the bucket" analysis.

Additionally, the EIR determines that cumulative energy impacts would be less than significant — without reference to a significance standard. (AR 3944.) UC attempts to distinguish *Lotus, supra*, 223 Cal.App.4th 645 because it "does not discuss cumulative impacts" (ROB 65:66:24-27), but then fails to explain how that makes a difference since CEQA requires standards of significance for both types of impacts. (Guidelines, § 15064.) Alternatively, UC purports to create its own standard: "whether 'the collective effect of the project would be to use fuel or energy in a wasteful or inefficient manner.'" (ROB 66:27-67:1.) UC fails to explain how the "collective effect of the project" is comprehensible or provides a meaningful standard for either the cumulative impact or the CPHP's incremental contribution. Further, this confused statement is set forth in a response to comment and not the Draft or Final EIR's analysis of energy impacts. (Compare AR 6114 [response to comment] with 1787-1788 [DEIR] and 3944-3945 [FEIR].) The EIR's failure to identify a significance standard for its cumulative impact analysis of energy is uncorrected.

Conclusion

Petitioners in the three related cases respectfully request this Court's judgment and peremptory writ in the public interest, ordering UC to set aside the CPHP approvals including certification of the EIR, and to revise and recirculate the EIR in compliance with CEQA before reconsideration.

Respectfully submitted,

December 30, 2021 SOLURI MESERVE, A LAW CORPORATION

By: _____
Patrick M. Soluri
Attorneys for Plaintiffs and Petitioners
PARNASSUS NEIGHBORHOOD COALITION
AND CALVIN WELCH

December 30, 2021 LAW OFFICE OF THOMAS N. LIPPE

By: _____
Thomas n. Lippe
Attorneys for Petitioner SAN FRANCISCANS FOR
BALANCED AND LIVABLE COMMUNITIES

December 30, 2021 BRANDT-HAWLEY LAW GROUP

By: _____
Susan Brandt-Hawley
Attorney for Petitioner
YERBA BUENA NEIGHBORHOOD
CONSORTIUM

PROOF OF SERVICE

I hereby declare that I am employed in the City of Sacramento, County of Sacramento, California. I am over the age of 18 years and not a party to the action. My business address is 510 8th Street, Sacramento, California 95814.

On December 30, 2021, I served the following document:

PETITIONERS' REPLY BRIEF ON THE MERITS

on the parties or attorneys for parties listed on the attached Service List.

Service was caused as follows:

✓ **BY ELECTRONIC MAIL**: I caused such document to be served via electronic service on the parties in this action via One Legal, a court approved electronic filing service provider, by transmitting and uploading a true copy of such document through One Legal's web interface and by providing the following email addresses listed below in the attached Service List.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct. Executed at Sacramento, California on December 30, 2021.

Mae Ryan Empleo

SERVICE LIST

Charles R. Olson Philip J. Sciranka Carolyn J. Lee LUBIN OLSON & NIEWIADOMSKI LLP The Transamerica Pyramid 600 Montgomery Street, 14th Floor San Francisco, California 94111 Telephone: (415) 981-0550 Facsimile: (415) 981-4343 E-mails: colson@lubinolson.com psciranka@lubinolson.com clee@lubinolson.com msaephan@lubinolson.com jwilson@lubinolson.com *Attorneys for Respondent* *The Board of Regents of the University of California et al.*	Anagha Dandekar Clifford UNIVERSITY OF CALIFORNIA Office of General Counsel 1111 Franklin Street, 8th Floor Oakland, California 94607 Telephone: (510) 987-0356 Facsimile: (510) 987-9757 E-mail: anagha.clifford@ucop.edu *Attorneys for Respondent* *The Board of Regents of the University of California et al.*
Thomas N. Lippe Kelly Perry LAW OFFICES OF THOMAS N. LIPPE, APC 201 Mission Street, 12th Floor San Francisco, CA 94105 Telephone: (415) 777-5604 Facsimile: (415) 777-5606 E-mails: Lippelaw@sonic.net; kmhperry@sonic.net *Attorneys for Petitioner* *San Franciscans for Balanced and Livable Communities*	William P. Parkin WITTWER PARKIN LLP 335 Spreckels Drive, Suite H Aptos, CA 95003 Telephone: (831) 429-4055 Facsimile: (831) 429-4057 E-mail: wparkin@wittwerparkin.com *Attorneys for Petitioner* *San Franciscans for Balanced and Livable Communities*
Susan Brandt-Hawley Jeanie Stapleton BRANDT-HAWLEY LAW GROUP P.O. Box 1659 Glen Ellen, CA 95442 Telephone: (707) 938-3900 E-mails: susanbh@preservationlawyers.com; jstapleton@preservationlawyers.com *Attorneys for Petitioner* *Yerba Buena Neighborhood Consortium, LLC*	

EXHIBIT 16

J A R E D M. I K E D A

661 San Felipe St., Salinas, CA 93901 phone (831) 422-6292 e-mail: *jmikeda@earthlink.net*

Tuesday, September 08, 2020

Richard Drury
Lozeau Drury, LLP
410 12th Street, Suite 250
Oakland, CA 94607

RE: Comments on Draft Environmental Impact Report for Proposed UCSF Comprehensive Parnassus Heights Plan

Dear Mr. Drury,

At your request, I have reviewed the Draft Environmental Impact Report ("DEIR") for the proposed UCSF Comprehensive Parnassus Heights Plan ("Project")[1]. My review focused on the DEIR's treatment of visual and shadow impacts. My comments are attached as follows:

[1] See appendix for Jared Ikeda qualifications

VISUAL IMPACT

As described in the Comprehensive Parnassus Heights Plan Draft Environmental Impact Report, the proposed plan would provide 2.9 million gross square feet (gsf) of new building space. Currently, there is approximately 3.92 million gsf of building space. With full implementation of the CPHP, the total gross square feet would be approximately 5.97 million, including instruction, research, clinical and support space, housing and structured parking. This is a substantial increase in building area, mass and height, and will undoubtedly create significant visual impacts.

Within this plan a new 16 story hospital is to be constructed at the far east end of the campus and rise to 294 feet in height. As stated in the Draft EIR, this new hospital will be subject to a subsequent project specific environmental review as more details of this project becomes available. However, the Draft EIR states (*pg 4.1-23*) that development under the CPHP would not have a substantial adverse effect on scenic vistas. A significant effect on a scenic vista as defined in the DEIR, is a substantial block or degrade of scenic view from public vantage points. In review of this plan and DEIR, it is apparent that the proposed building plan and particularly the new 16 story hospital would have significant visual impacts. (*see figure 1 and 2*)

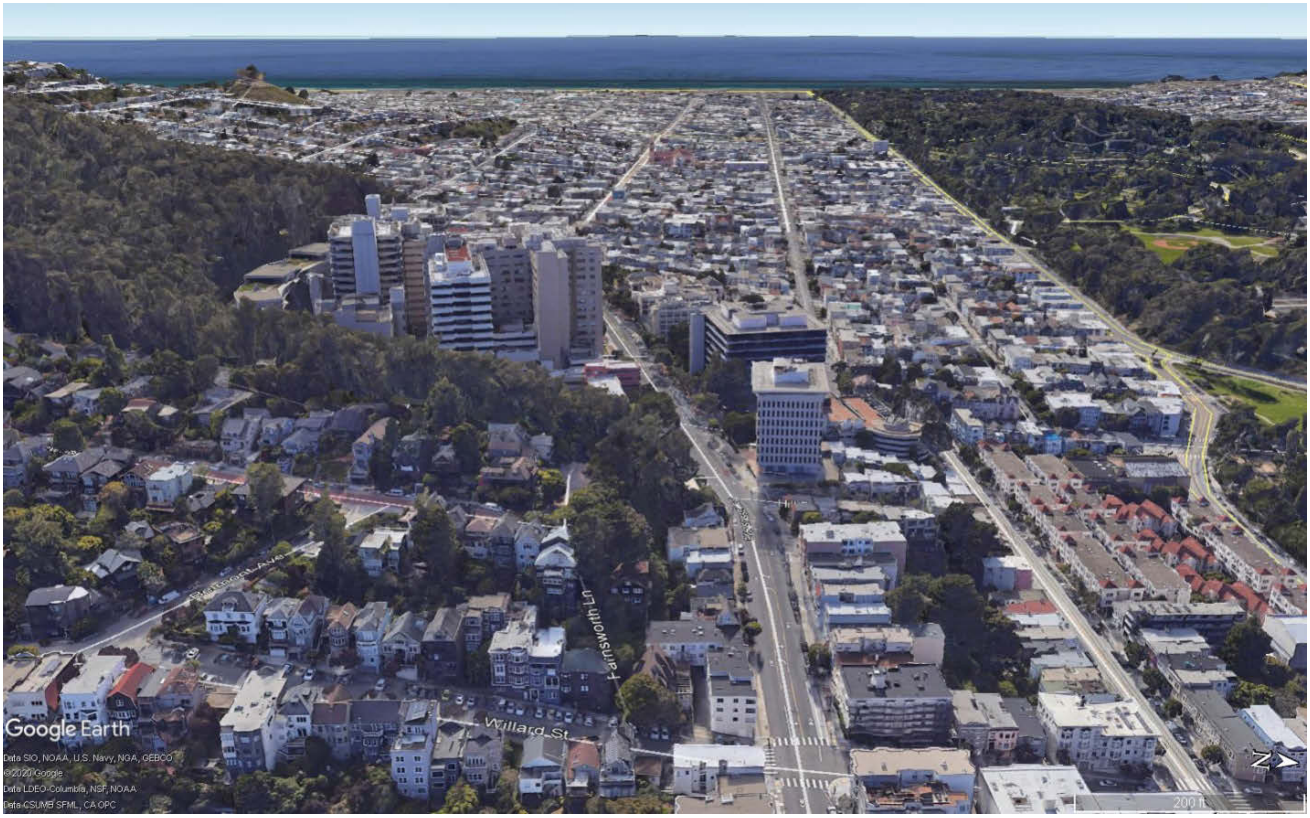

Fig 1 Existing view west from adjacent neighborhood

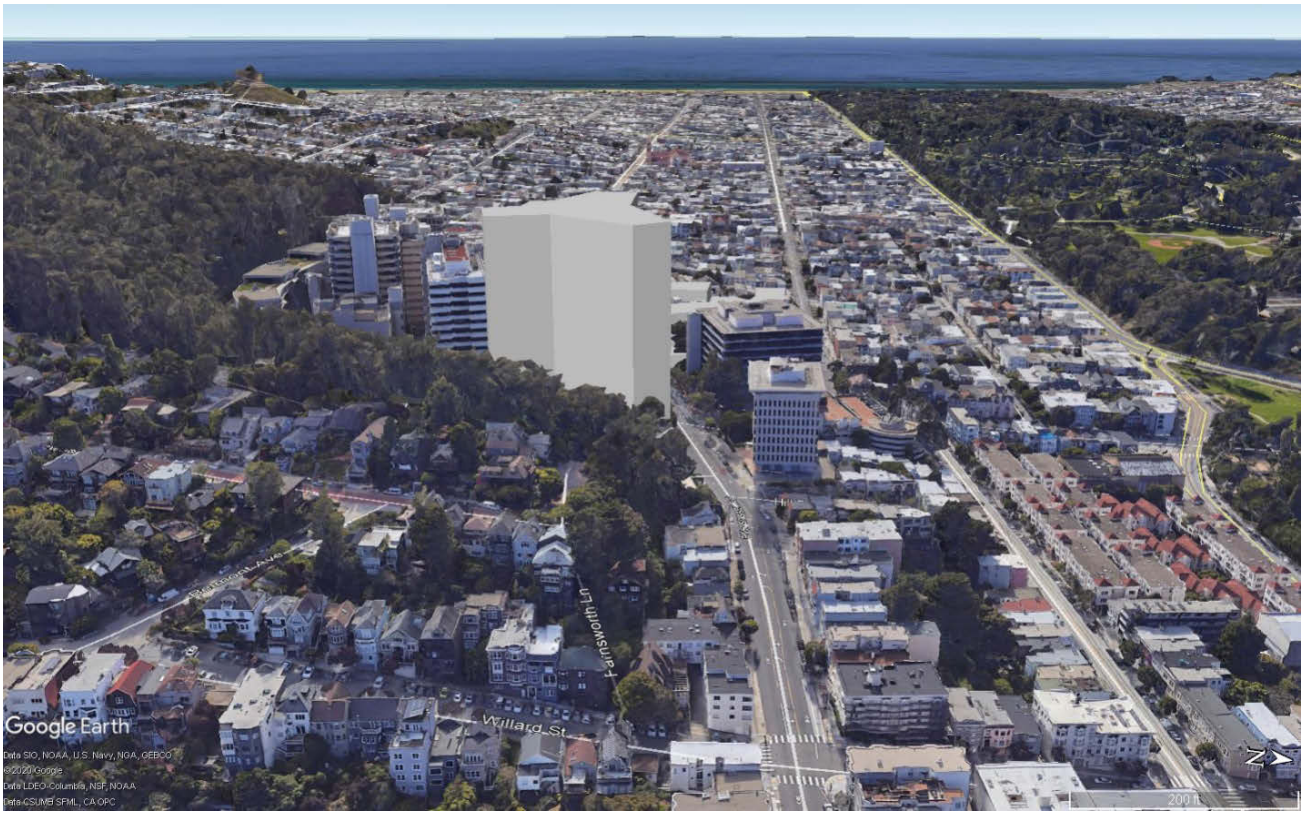

Fig 2 View west with proposed new hospital

By including this new hospital plan within this DEIR and concluding that it would not have a substantial adverse impact on a scenic vista, avoids discussion and possible mitigation measures in subsequent environmental review. This is not the intent of CEQA. Environmental review is a means to avoid or lessen adverse environmental effects at the outset, and by dismissing this issue at this time implies that it will not be address at a project level EIR in the future.

The topography of Mount Sutro and the green of the forested reserve are major elements that visually shape the adjacent neighborhoods as well as the overall city scape as seen from a distance. The views from publically accessible areas in and around the proposed UCSF Parnussus campus to these landmarks are of importance in establishing the quality of the environment here. One particularly significant local view point is the trail head near the intersection of Farnsworth Lane and Edgewood.

Public Trail Head at the end of Farnsworth Lane

The proximity and mass of the proposed new hospital will substantially impact this viewpoint. The 294 ft height and form of the proposed building will be seen and will block views to the west. The existing tree masses in this area and subsequently along the trail leading down, may tend to screen and filter the vistas but, the new proposed hospital will entirely block scenic vistas and dominate the view. This is a significant change to the public view and the inherent quality of the trail head and experience of accessing and walking this trail. This impact to the environmental quality of this publically accessible trail is significant and should be taken into account in considering mitigation measures or alternatives.

Furthermore the entire neighborhoods to the east, and views from streets such as Edgewood and Belmont and Willard and areas to the north of Parnassus Ave such as Hill Point Way will also be visually impacted by the large dominant mass of the new hospital. The size and height of the new hospital will also block views to Mt Sutro and the forest reserve from areas north of Parnassus Ave and Irving Street, and the visual experience of seeing a natural setting of a forested hillside from the local sidewalks and streets will be changed to one of a large urban building.

The visual simulations shown here have been constructed within Google Earth and incorporate scale models of the building masses and heights identified in the DEIR.

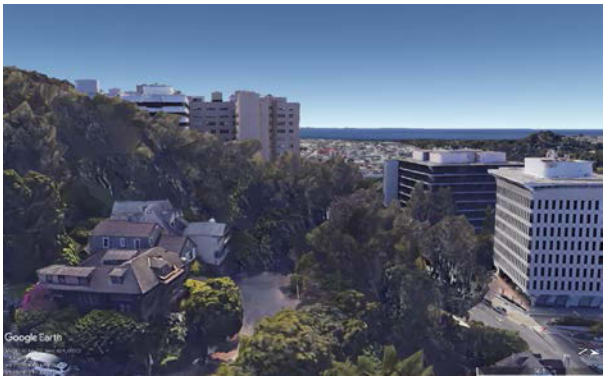

Figure 3 View west from end of Farnsworth

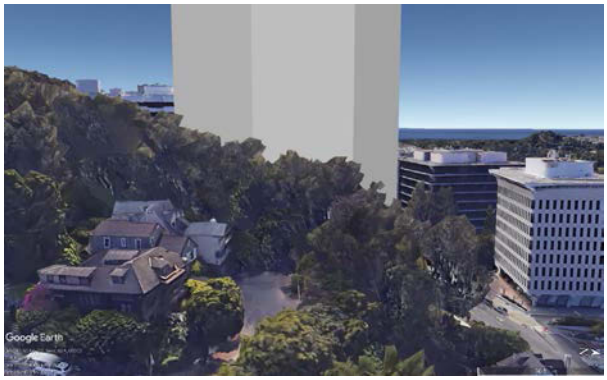

Figure 4 View west from end of Farnsworth with new hospital

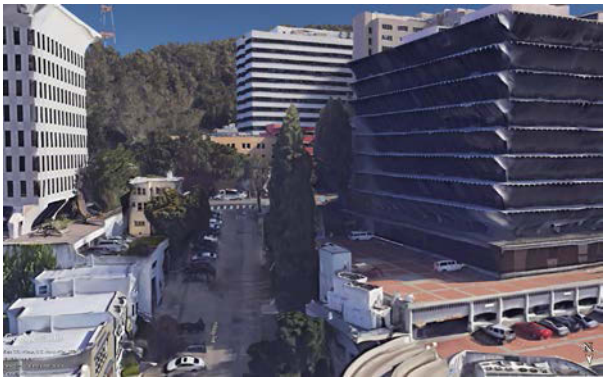

Figure 5 View south from Hill Point Way

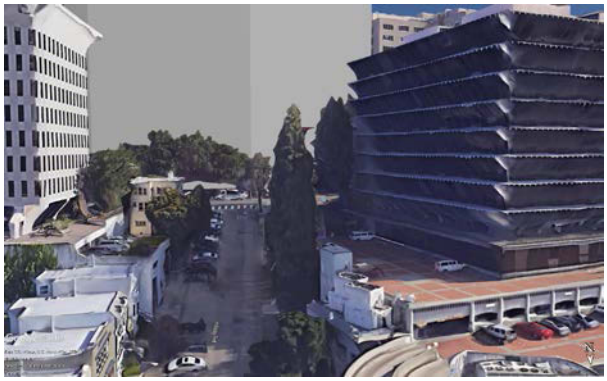

Figure 6 view south from Hill Point Way with new hospital

The views from the trailhead at the end of Farnsworth and adjacent residential neighborhood will become dominated by the mass of the new proposed hospital.

By stating that impacts to publically available scenic vistas are less than significant, the DEIR does not provide any possible mitigation measures or alternatives. This precludes further discussion and possible mitigation measures in future specific project environmental review and essentially allows development of the height and massing of the proposed buildings at this stage of the review process.

Views from other Prominent Vantage Points

The DEIR also identifies several other prominent publically accessible vantage points. These include Tank Hill natural area, Buena Vista Park, and Corona Heights Park. These are all located to the east of the Parnassus Heights campus. The DEIR states that the implementation of the CPHP would not result in a substantial adverse impact to scenic vistas from these publically accessible vantage points. However, in review it is again apparent that the new proposed hospital would change the skyline. (*see figures 7 through 12)*

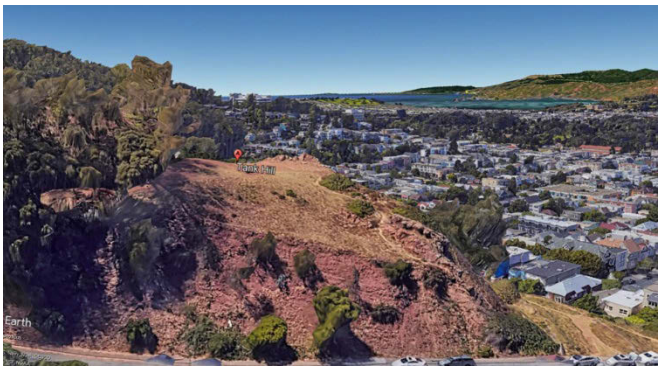

Fig 7 view westward from Tank Hill natural area

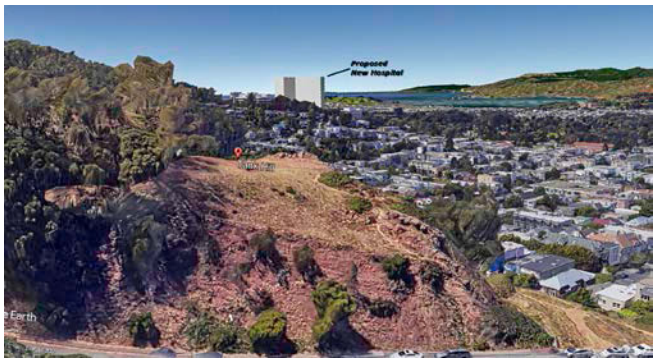

Fig 8 view from Tank Hill natural area with proposed new hospital

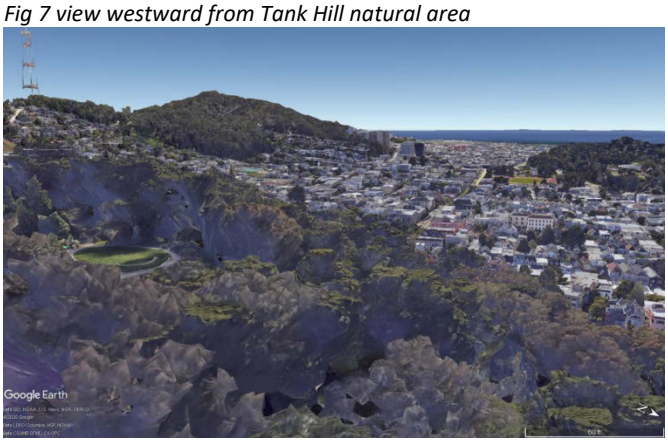

Figure 3 view from Buena Vista Park

Figure 5 view from Buena Vista Park with proposed hospital

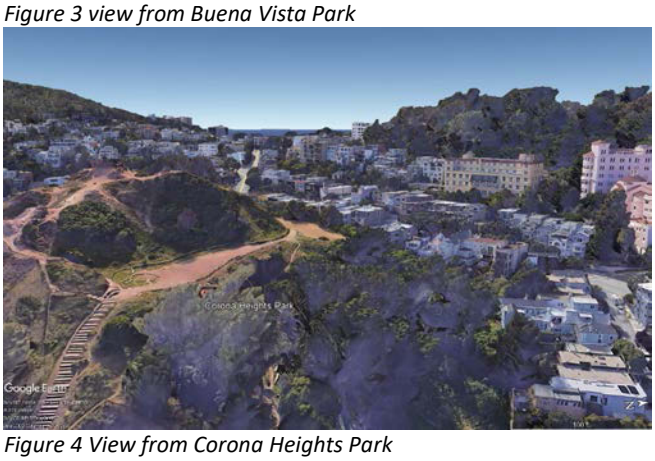

Figure 4 View from Corona Heights Park

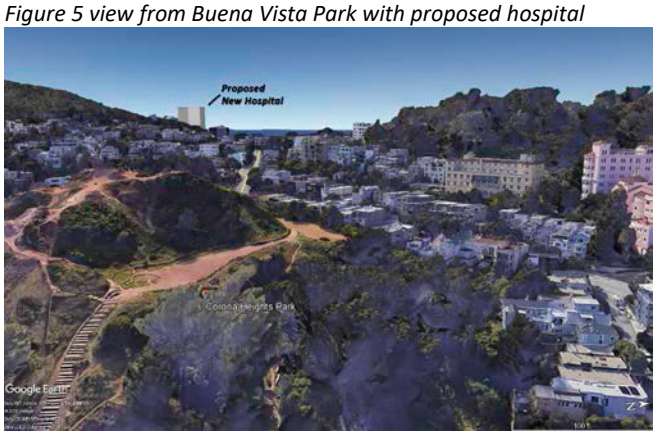

Figure 6 View from Corona Heights Park with proposed hospital

The development of the CPHP will undoubtedly change the visible skyline by addition of the new 294 foot high hospital. This is a noticeable change and should be addressed in the context of the Urban Design

Element of the San Francisco General Plan. The height and mass of the proposed new hospital will be highly visible as a new feature in the skyline from these public parks as well as from various other locations and streets within the surrounding neighborhoods. The Urban Design Element includes a policy to: "*Recognize and protect major views in the city, with particular attention to those of open space and water. Views contribute immeasurably to the quality of the city and to the lives of its residents. Protection should be given to major views whenever it is feasible, with special attention to the characteristic views of open space and water that reflect the natural setting of the city and give a colorful and refreshing contrast to man's development."*

The Urban Design Element of the city's General Plan states that shape, height and bulk of tall building with respect to views from important vantage points around the city should contribute to the beauty of the skyline. While views from private property are not protected in city regulations, the General Plan does protect specific view corridors from the public realm.

It is not clear in the DEIR whether the CPHP has undergone an initial Preliminary Project Assessment by the city's Urban Design Advisory Team (UDAT) to determine consistency with Urban Design Guidelines and other relevant design regulations, the Planning Code, and other policies in the General Plan. Is this review to come at a later environmental review as the project evolves? If so, does this mean that the height and mass of the new hospital is a given if this plan is approved. Since the proposed new hospital will be seen from several publically accessible view points and parks, it seems that such a major feature that will change the visible skyline should be reviewed and assessed by UDAT prior to further project level environmental review.

Overall Impact on Shadow

The DEIR states that implementation of the CPHP would not create new shadows in a manner that would substantially and adversely affect the use and enjoyment of publically accessible open spaces. The DEIR provides description and diagrams of shadow impacts onto various public locations during different seasons and times of day. These public locations include parks and schools which are some distance away and will receive "occasional shadow". The DEIR states that these areas would not be adversely affected and the impact is considered less than significant.

It appears though that certain areas along Parnassus Ave and Irving St. will be subject to "frequent shadows" throughout the year. (*Fan 1 of the Shadow Study Appendix within the DEIR*) Although these are not officially called out as "publically accessible open spaces" needing to be addressed within the city's Urban Design Element guidelines, they are public sidewalk and streets that are frequented by pedestrians and passerbys. These areas currently receive shadows from existing structures but, it can be expected that the increased height of the proposed new hospital and Milberry Terrace and Irving St Gateway projects will further increase the time and frequency of the shadows along Irving St and Parnassus Ave.
Although shadows do not directly affect change in air temperature, they do affect the direct exposure to sun radiation and the resulting feeling of warmth to a person's body. Further, sun radiation can affect the temperature of a surface struck by sunlight and increase that temperature and it's surroundings. The comfort and attractiveness of these particular areas to pedestrians and passerbys may be adversely affected and should be addressed in the EIR. The city's Urban Design Guidelines state that plazas or parks located in the shadows cast by large buildings can be unpleasant for the user and large buildings can be oriented to minimize shadows falling on public or semi-public open space. The guidelines state that the height and mass of tall, closely packed buildings can be shaped to permit sunlight to reach open spaces.

The CPHP does provide new open pedestrian areas within the campus and that is welcomed and appreciated and is a positive. But, discussion of the impact to the existing local areas and circulation patterns should still be noted and made aware to the public. There should be a discussion of how impact to these public areas might be mitigated.

Conclusion

The existing features of Mt Sutro and the Forest Reserve provide form and a sense of place and living within the environment to the UCSF campus and adjacent neighborhoods. The new CPHP with its heights and mass of proposed buildings would alter and change that sense. As noted in the city's Urban Design Element:

"The uses and benefits of the city pattern are many and profound. This pattern is, first of all, bound up in the image and character of the city. To weaken or destroy the pattern would make San Francisco a vastly different place. Second, the city pattern has important psychological effects upon residents of the city. It provides organization and measured relationships that give a sense of place and purpose and reduce the degree of stress in urban life. Outlooks upon a pleasant and varied pattern provide for an extension of individual consciousness and personality, and give a comforting sense of living with the environment."

The visual change from the implementation of the CPHP will be seen from many locations throughout the adjacent neighborhoods as well as other areas and parks within the city including areas of Golden Gate Park. The impact of the shadow patterns to the adjacent neighborhoods will also affect the quality experiences of spaces and pedestrian walkways by the public. These should be considered in the approval process and given recognition in the EIR.

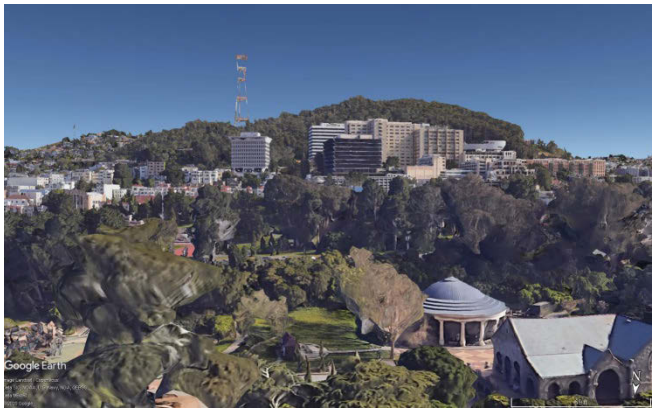

Figure 10 view south from above Golden Gate Park

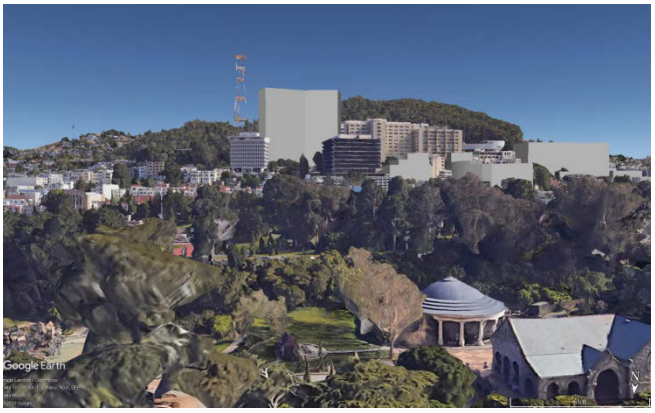

Figure 17 view south from Golden Gate Park with implementation of CPHP

Appendix:

Jared M. Ikeda

Jared Ikeda is a retired Landscape Architect and environmental planner with experience in preparation of land use planning studies, community planning, environmental impact studies, urban site planning, landscape development plans, and recreation planning. He has been involved in a wide range of studies and projects for both public and private sector clients and has participated in and directed all phases of land planning, investigative studies and landscape development. He has served on the board of directors of a major international landscape architectural firm, and Landwatch Monterey County, and served as a lecturer in the Department of Landscape Architecture at California State Polytechnic University, Pomona. His teaching activities focuses upon advanced landscape design and stressed use of computer technology including AutoCAD and ArcMap GIS software. He has prepared a number of visual impact and simulation studies using a variety of computer software including Sketchup and Google Earth. He has been involved in the preparation of the Monterey County General Plan Update from 1999 to 2004 and was responsible for studies and preparation of the Environmental Resource Management Element and the Circulation Element. He also directed consultant work on the Environmental Impact Report.

Project Experience
A selected list of relevant project experience includes:

Granite Chief Wilderness Area – Visual simulation of a proposed gondola
Client: Mountain Area Preservation Foundation

Preparation of a visual simulation of a proposed gondola system connecting the Squaw Valley Resort with Alpine Meadows village. The gondola system crosses an area adjacent to the Granite Chief Wilderness area and impacts the visual quality within the wilderness area.

Donner Summit Development Impact Study

Client: Sierra Watch and the Sierra Club

As part of a consulting team charged with review and comment upon a potential new development of an environmentally sensitive area of the Donner Summit, Mr Ikeda prepared GIS mapping and visual simulation of the proposed plan utilizing Google Earth software.

Dyer Mountain Visual Simulations

Client: Shute Mihaly Weinberger, llc

Mr Ikeda prepared 3 dimensional visual simulations of a proposed forest management plan and ski resort development in Lassen County. The work was utilized to demonstrate the visual impact of the proposed plan.

Colosseum Gold Mine – Visual Impact Analysis
Client: Bureau of Land Management

Prepared a visual impact analysis and land restoration plan for the Colosseum Gold Mine, an open pit gold mine near the California/Nevada border. The project utilized computer generated visual simulations.

Professional Experience
Principal: Ikeda Consulting, 2005 to Present
Monterey County Redevelopment Agency, 2004-2005
Senior Admin Analyst: County of Monterey, Environmental Resource Policy, 1999-2004
Lecturer: Cal Poly Pomona, Dept of Landscape Architecture 1997-1999
Vice-President/Officer-in-Charge EDAW Inc., Irvine Office: 1980 to 1987

EDAW, Inc. 1969 to 1989

Education

Bachelor of Science in Environmental Design, California State Polytechnic University, Pomona, 1968.

Honors

Best Comprehensive Plan, Orange Co. Section, American Planning Association, San Juan Capistrano Master Open Space Plan, 1992
Distinguished Alumnus Award, 1983, School of Environmental Design, California State Polytechnic University, Pomona.
Merit Award, American Society of Landscape Architects, Santa Ana River Open Space Study, 1973

Lectures & Publications

Mr. Ikeda has served as a guest lecturer at UCLA, UC Irvine, and Cal Poly Pomona. Mr. Ikeda has also served as Chairman of a panel on Computers and Landscape Architecture for the Southern California Chapter of the American Society of Landscape Architecture.
Contributor to *"Design with Digital Tools"* McGraw Hill, 2000

Appendix MC
Miscellaneous Correspondence Appendix

From: James Crowder
To: Wong, Diane C.
Cc: Patrick Soluri
Subject: File Request re: New Hospital DEIR
Date: Friday, January 28, 2022 4:43:13 PM

This Message Is From an External Sender
This message came from outside your organization.

Good afternoon Ms. Wong,

My firm is currently working on comments to the Draft Environmental Impact Report for the New Hospital at Parnassus Heights. The DEIR relies on several visual simulations in its analysis of aesthetic impacts. In order to adequately respond to this information, are requesting the 3D AutoCAD files for the proposed new hospital (or whatever native format used). For your convenience, we created a link to transfer the files electronically: https://www.dropbox.com/request/uSxsepFY6uXRJCP4fgQ1

Please let me know if you have any questions regarding this request. Thank you for your assistance.

Best regards,

James Crowder
Attorney
Soluri Meserve, A Law Corporation
510 8th Street
Sacramento, CA 95814

☎ *tel:* 916.455.7300 ▪ *fax*: 916.244.7300 ▪ *mobile:* 512.413.5313 ▪ *email*:James@Semlawyers.com

From:	Tom Lippe
To:	Campus Planning - EIR
Cc:	Wong, Diane C.
Subject:	RE: NHPH Draft EIR
Date:	Monday, February 7, 2022 10:54:27 AM

This Message Is From an External Sender
This message came from outside your organization.

I represent San Franciscans for Balanced and Livable Communities regarding this EIR. This is my third request for two documents referenced in the NHPH Draft EIR:

- At page 4.9-26: Arup, 2021. Final UCSF New Hospital at Parnassus Heights Storm Drainage Design Report. December 6, 2021.
- At Appendix HYDA; page 2 of 13: Arup, "UCSF NHPH Combined Sewer System Modeling Updates", November 1, 2021

Please provide these documents to me immediately so that I and my client can review and comment on the Draft EIR's analysis of impacts on water quality.
Thank you,
Tom Lippe

Law Offices of Thomas N. Lippe APC
201 Mission St., 12th Floor
San Francisco, CA 94105
Tel 415 777-5604 x 1
Fax 415 777-5606
e-mail: lippelaw@sonic.net
Web: www.lippelaw.com

From: Tom Lippe <lippelaw@sonic.net>
Sent: Friday, February 4, 2022 11:17 AM
To: 'diane.wong@ucsf.edu' <diane.wong@ucsf.edu>
Subject: RE: NHPH Draft EIR

Ms Wong,
I represent San Franciscans for Balanced and Livable Communities regarding this EIR. This is my second request for two documents referenced in the NHPH Draft EIR:

- At page 4.9-26: Arup, 2021. Final UCSF New Hospital at Parnassus Heights Storm Drainage Design Report. December 6, 2021.
- At Appendix HYDA; page 2 of 13: Arup, "UCSF NHPH Combined Sewer System Modeling Updates", November 1, 2021

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San Francisco, CA 94105
Tel 415 777-5604 x 1
Fax 415 777-5606
e-mail: lippelaw@sonic.net
Web: www.lippelaw.com

From: Tom Lippe <lippelaw@sonic.net>
Sent: Friday, January 28, 2022 3:25 PM
To: 'diane.wong@ucsf.edu' <diane.wong@ucsf.edu>
Subject: NHPH Draft EIR

Dear Ms Wong,

The NHPH Draft EIR refers to two documents:

- At page 4.9-26: Arup, 2021. Final UCSF New Hospital at Parnassus Heights Storm Drainage Design Report. December 6, 2021.

- At Appendix HYDA; page 2 of 13: Arup, "UCSF NHPH Combined Sewer System Modeling Updates", November 1, 2021

Please provide these documents to me as soon as possible.

Thank you,

Tom Lippe
Law Offices of Thomas N. Lippe APC
201 Mission St., 12th Floor
San Francisco, CA 94105
Tel 415 777-5604 x 1
Fax 415 777-5606
e-mail: lippelaw@sonic.net
Web: www.lippelaw.com

Appendix AIR-A
NHPH Construction Data

Attachment A

UCSF New Hospital – Construction Data Needs for Air Quality, GHG, and Noise Analysis – Project-Level

Instructions: Please provide the information listed below. This data request is grouped into two major categories:

1. **Required data needs** – this information is required to perform the analysis
2. **Preferred data needs** – this information is not required, but will improve the accuracy of the modeling

REQUIRED DATA NEEDS

Note: This information is required to perform the analysis.

UCSF Project Name: New Hospital at Parnassus Heights (NHPH)

1. Project Construction Schedule (approximate start date – approximate end date)

From: January 2023 to**:** January 2033

2. What are the durations of each Construction Phase?
***Note for days per week enter either 5 (M-F); 6 (M-Sa); or 7 (M-Su).*

Phases (if applicable)	Number of Workers (Max.)	Start (month/date/year)	Finish (month/date/year)	Months	Total Duration (work days)	Days per week
LPPI Demolition		Included in the 2014 LRDP EIR submitted for the demolition of the Langley Porter Institute and its auxiliary buildings. No construction resources allocated to demolition				
Site Preparation / MCWUtilities	75	9/1/2022	10/1/2023	14 Months	313	5
Grading / Shoring / Mass	75	3/1/2024	10/1/2024	6 Months	134	5
Drainage / Utilities / Subgrade	75	2/1/2023	6/1/2024	16 Months	358	5
Foundations	75	6/1/2024	3/1/2025	10 Months	224	5
Structure	125	5/1/2025	11/1/2026	17 Months	380	5
Exteriors Building Construction	125	2/1/2026	2/1/2028	24 Months	739	5
Interiors Building Construction	250	2/1/2026	11/1/2028	33 Months	551	5
Final Site Improvements	50	1/1/2029	11/1/2029	11 Months	246	5
Other 1: Commissioning		TBD, 1 Year duration Post Completion of NHPH				
Other 2: ML Renovations/Bridge Tunnel Connection	TBD	01/05/2030	01/05/2033		746	5

Note: Construction phases may overlap; for example, Architectural Coating (interior and/or exterior painting) may begin on some floors when structural work continues above.

3. What are the daily hours of construction?
(What time will construction start, what time will construction end on each day)

Monday through Friday:	From: 7 a.m.	To: 5 p.m.
Saturday:	From: 8 a.m.	To: 5 p.m.
Sunday:	From: 8 a.m.	To: 5 p.m.

Is a Continuous Concrete Pour planned (e.g., concrete pouring over an extended duration, such as a 24-hour concrete pour)?
If yes, indicate the number of hours for Continuous Concrete Pouring: **N/A Hours**

Additional construction timing notes: Typical construction hours as designated by community guidelines to be from 7 AM to 5 PM. Due to the structural requirements of concrete pour size, concrete construction times may vary from 5 AM to 10 PM. When necessary, for construction, the Project Manager will get special approval from all parties to continue work past 5 PM. Tower Crane erection/dismantle and other special construction activities may require weekend work, only with approval of any impacted groups. Any work to be done during the extended work hours from 5 PM – 8 PM will need advance notice from the Project Manager. Noisy work will not be allowed on Sundays.

4. Total Construction Site Area? 2.3 acres.

Additional site area notes: The total site acreage includes, Medical Center Way (MCW), Moffitt-Long Hospitals, NHPH Footprint, and the Loading Dock.

5. Moffitt-Long Renovations Demolition

A. What is the anticipated total volume to be demolished? (Building square footage or tons of debris)? 85 tons of debris; 114,000 bldg. square feet.

B. Maximum number of haul trucks during demolition: 15 Total 3 Daily

C. What are the anticipated demolition truck haul routes?

(see schedule for estimated construction durations)

6. Haul Trucks

D. What is the volume of excavated material to be removed? 110,700 cu. yds.

E. What is the volume of excavated material to be imported? 5,400 cu. yds.

F. Maximum number of haul trucks: 664 Total 10 Daily

G. What are the anticipated truck haul routes?

Anticipated Soil Truck Hauling Routes will be. (See attached truck route document) dictated by campus.

See excavation diagram below.

H. When would soil hauling occur in the construction schedule?

From: 01/01/2023 to**:** 09/23/2024 | Excavation
Total Number of Days: 431

From: 04/01/2027 to: 07/02/2027 | Landscaping
Total Number of Days: 65

From: 01/06/2025 to**:** 7/30/2025 | Parnassus Tunnel Excavation
Total Number of Days: 186

From: Dates TBD Project Stil Under Design Review| Diesel Fuel Tank Project Excavation
Total Number of Days: TBD

7. Other Heavy-Duty Trucks

I. Maximum number of other heavy-duty trucks needed for equipment mobilization/demobilization, removal of demolition material, delivery of building materials (e.g. utilities, concrete/cement, wood, steel, fuel), and any other activities during construction: 1000 Total 20 Daily

J. When would this trucking activity occur in the construction schedule?

From: 01/01/2023 to**:** 01/05/2033
Total number of Days: 2493

8. Building Construction Phase:

Please Provide estimated project construction by phase based on land use type (please add additional phases or non-residential land uses as appropriate):

A. Phase 1:

i. **Educational Facilities:** _____(type); _____square footage
ii. **Research Facilities:** _____(type); _____square footage
iii. **Medical Facilities:** X (type); 834,000 square footage
iv. **Open Space:** _____(type); _____square footage

9. Paving Phase:

Would Asphalt Paving be required? X Yes ____No

If so:

a. How much of the site is anticipated to be asphalt paved? 1 acres

Additional Paving Notes: Repaving Medical Center Way and Parnassus Avenue adjacent to the site during utility relocation work. This work will occur during the Site Improvements/Utilities phase, as MCW will be trenched for the sub-grade utilidor work. Parnassus Avenue will be repaved during the Site Utilities phase as well.

PREFERRED DATA NEEDS

Note: this information is not required, but will improve the accuracy of the modeling. For areas that are left blank, we will use model defaults and/or conservative/worst-case assumptions. The more data that is provided, the more realistic the modeling will be for the project, and the lower emissions are likely to be (because we will have to use fewer conservative assumptions).

10. What construction equipment pieces are anticipated for each phase, and how many of each during an <u>average*</u> construction day? Please use table below to indicate quantity of each piece of equipment.

* Please provide the total inventory of all the construction equipment that would be used for the construction of the project for each applicable phase of construction (i.e., demolition, grading, building, etc.). If unknown, the modeling equipment default value for each construction phase coupled with professional experience will be used to determine the appropriate equipment lists.

Please indicate in <u>Column 2</u> if any of this equipment would be electrically powered and, if so, whether electricity would come from the utility power grid or from diesel-powered on-site generator(s).

		CONSTRUCTION PHASES																			
Equipment	**Electrically Powered? (Yes/No)**	**Demolition & Site Preparation**		**Grading/ Excavation**		**Drainage/ Utilities/ Sub-Grade**		**Foundations**		**Structure**		**Building Construction Exteriors**		**Building Construction Interiors**		**Final Site Improvements**		**Other 1 *(Diesel Fuel tank)***		**Other 2 *(Renovations)***	
		Max. Daily	**Hrs/ day**	**Max. Daily**	**Hrs/ day**	**Max. Daily**	**Hrs/ day**	**Max. Daily**	**Hrs/ day**	**Max. Daily**	**Hrs/ day**	**Max. Daily**	**Hrs/ day**	**Max. Daily**	**Hrs/ day**	**Max. Daily**	**Hrs/ day**	**Max. Daily**	**Hrs/ day**	**Max. Daily**	**Hrs/ day**
Air Compressors	No	1	8					1	8	1	2										
Backhoes	No	1	8					1	8					1	8						
Bore/Drill Rigs	No							2	8												
Cement and Mortar Mixers	No																				
Concrete/ Industrial Saws	No	1	8																		
Compactor	No					1	4									1	4				
Cranes (Mobile)	No			1	8																
Cranes (Tower)	Yes							1	8	1	8	2	8								
Crawler Tractors	No																				
Crushing/ Proc. Equipment	No																				
Dumpers/ Tenders	No	1	8	1	8	1	8			1	8										
Excavator	No	2	8																		
Forklifts	No			1	8	1	8	1	8	1	8	2	8	1	8						
Generator Sets	No					1	2														
Graders	No																				
Loaders	No			1	8																
Off-Highway Tractors	No																				

Equipment	Electrically Powered? (Yes/No)	CONSTRUCTION PHASES																			
		Demolition & Site Preparation		Grading/ Excavation		Drainage/ Utilities/ Sub-Grade		Foundations		Structure		Building Construction Exteriors		Building Construction Interiors		Final Site Improvements		Other 1 *(Diesel Fuel tank)*		Other 2 *(Renovations)*	
		Max. Daily	Hrs/ day	Max. Daily	Hrs/ day	Max. Daily	Hrs/ day	Max. Daily	Hrs/ day	Max. Daily	Hrs/ day	Max. Daily	Hrs/ day	Max. Daily	Hrs/ day	Max. Daily	Hrs/ day	Max. Daily	Hrs/ day	Max. Daily	Hrs/ day
Off-Highway Trucks	No																				
Pavers	No					1	8									1	8				
Paving Equipment	No					1	8									1	8				
Pumps	No																				
Rollers	No	1	8			1	8														
Rough Terrain Forklifts	No							1	8												
Rubber Tired Dozers	No																				
Rubber Tired Loaders	No	1	8																		
Scraper	No																				
Signal Boards	No																				
Skid Steer Loaders	No	1	8	1	8	1	8	1	8							1	8				
Surfacing Equipment	No																				
Sweepers/ Scrubbers	No			1	4	1	4	1	4	1	4					1	4				
Tractors/Loaders/Backhoes	No	1	8	1	8	1	8														
Trenchers	No																				
Welders	Yes									2	8										
Other (Specify)																					
Concrete Truck - Average								4	8	2	8										
Pile Hammer																					

4

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11. Site Preparation Phase (e.g., vegetation removal and minor earthwork prior to mass grading and excavation):

Would site preparation be required? X Yes ____ No ____ Unknown
Would material export be required? X Yes ____ No ____ Unknown

If "yes" for material export, complete as much of the following as possible:

Information	Amount	Units
Material Export (if applicable): Total Amount of vegetation and earthwork removal	2,600	Total Export Cubic Yards
	50	Daily Export Cubic Yards
Maximum Number of Haul Trucks	52	Total Export
	5	Daily Export
Capacity of Haul Trucks	10	Cubic Yards (typically 10 to 20 cubic yards; Default is 16 cubic yards/20 tons)
Distance to Disposal Site (if known)	20	Miles (default assumption is 20 mi.)
Describe Haul Truck Route (entrance/exit points, streets, nearest freeways, etc.). If material is hazardous, specify the location of the hazardous waste receiver (e.g., Kettleman). Material Export assumes all of the existing landscaping sections of the Parnassus Campus that will need to be removed for the New Hospital project.		

12. Grading and Excavation Phase:

Would grading and excavation be required? X Yes ____ No ____ Unknown
Would material export be required? X Yes ____ No ____ Unknown
Would material import be required? X Yes ____ No ____ Unknown

Acres disturbed during grading on a maximum (worst-case) construction day: **- Acres**

Will there be equipment a staging area and a materials lay-down area: **X Yes** ____ **No**
If yes, and staging area is offsite please provide a map of the location(s).
If yes, what size? ____

If "yes" for **material export**, complete as much of the following as possible:

Information	Amount	Units
Material Export (if applicable): Total Amount of earthwork removal	108,100	Total Export Cubic Yards

	200	Daily Export Cubic Yards
Maximum Number of Haul Trucks	540	Total Export
	10	Daily Export
Capacity of Haul Trucks	20	Cubic Yards (typically 10 to 20 cubic yards; Default is 16 cubic yards/20 tons)
When would soil hauling occur in the construction schedule?	06/05/2024	Start Date
	01/05/2033	End Date
	140	Total number of days
Distance to Disposal Site (if known)	**TBD**	Miles (default assumption is 20 mi.)
Describe Haul Truck Route (entrance/exit points, streets, nearest freeways, etc.). If material is hazardous, specify the location of the hazardous waste receiver (e.g., Kettleman).		

If “yes” for **material import**, complete as much of the following as possible:

Information	Amount	Units
Material Import (if applicable): Total Amount of vegetation and earthwork removal	5,400	Total Import Cubic Yards
	75	Daily Import Cubic Yards
Maximum Number of Haul Trucks	72	Total Import
	5	Daily Import
Capacity of Haul Trucks	15	Cubic Yards (typically 10 to 20 cubic yards; Default is 16 cubic yards/20 tons)
When would soil hauling occur in the construction schedule?	04/01/2027	Start Date
	07/02/2027	End Date
	65	Total number of days
Distance to Import Site (if known)	TBD	Miles (default assumption is 20 mi.)
Describe Haul Truck Route (entrance/exit points, streets, nearest freeways, etc.). See Truck Route Map		

13. Drainage/Utilities/Trenching CIVIL

Would a separate drainage/utilities/trenching phase be required?
X Yes ____ No ____ Unknown

14. Foundation/Concrete Pour

Would a separate foundation/concrete pour phase be required?
X Yes ____ No ____ Unknown

If "yes", complete as much of the following as possible:

Information	Amount	Units
Concrete Pouring Amount	18,170	Total Cubic Yards of Concrete
	100	Daily Cubic Yards of Concrete
Maximum Number of Concrete Trucks	181	Total Trucks
	10	Daily Trucks
Capacity of Concrete Trucks	10	Cubic Yards (typically 10 cubic yards)
When would concrete pouring occur in the construction schedule?	12/17/2024	Start Date
	09/30/2025	End Date
	120	Total number of days
Distance to concrete production site (if known)	N/A	Miles (default assumption is 20 mi.)
Describe Concrete Truck Route (entrance/exit points, streets, nearest freeways, etc.). The concrete truck may follow the truck route when near the site in San Francisco. For travel from the North, use US-101 N for all truck routes and travel from the south use US-101 S.		

15. Core and Shell/SOMD Concrete Pour

Would a separate foundation/concrete pour phase be required?
X Yes ____ No ____ Unknown

If "yes", complete as much of the following as possible:

Information	Amount	Units
Concrete Pouring Amount	20,000	Total Cubic Yards of Concrete
	100	Daily Cubic Yards of Concrete
Maximum Number of Concrete Trucks	200	Total Trucks
	10	Daily Trucks

Capacity of Concrete Trucks	10	Cubic Yards (typically 10 cubic yards)
When would concrete pouring occur in the construction schedule?	01/052025	Start Date
	01/05/2026	End Date
	260	Total number of days
Distance to concrete production site (if known)	N/A	Miles (default assumption is 20 mi.)
Describe Concrete Truck Route (entrance/exit points, streets, nearest freeways, etc.). The concrete truck may follow the truck route when near the site in San Francisco. For travel from the North, use US-101 N for all truck routes and travel from the south will travel through US-101 S		

16. Paving Phase

Would Asphalt Paving be required? X Yes ____No

If "yes" complete as much of the following as possible:

Information	Amount	Units
Total Area of Asphalt Paving	1	Total Acres
Describe Areas to be Asphalt Paved (e.g., parking areas, adjacent streets, etc.). Pavement of Parnassus Avenue and Medical Center Way for all utility relocation going along these roads. The paving will occur during various phases, primarily the MCW widening for utilities and the		

17. Architectural Coating Phase:

Would Architectural Coating (e.g., paint) be required? X Yes ____No

If "yes" complete as much of the following as possible (if unknown program defaults/air district requirements will be used):

Information	Amount	Units
Residential Interior Area Coated	N/A	Square feet coated
	N/A	Paint VOC (grams/liter)
Residential Exterior Area Coated	N/A	Square feet coated
	N/A	Paint VOC (grams/liter)
Non-Residential Interior Area Coated	735,700	Square feet coated

	TBD	Paint VOC (grams/liter)
Non-Residential Exterior Area Coated	190,000	Square feet coated
	TBD	Paint VOC (grams/liter)
Architectural Coating Notes: *(e.g., please note if exterior cladding will be pre-finished)*:		

18. Other 1: Phase Name: Moffitt-Long Hospital Renovations

(Please include all pertinent information to help use accurately model this phase. Insert sections from pervious phases that are relevant to this phase).

Additional Phase Notes: After the completion of NHPH, the adjacent hospital buildings will be renovated as a part of the New Hospital projects. Additional construction resources have been allocated to this phase, but any specified quantities can be provided after scope of work is decided upon.

19. If known, what is the anticipated make and horsepower of each of the construction equipment pieces?

Please add extra rows as appropriate for different makes of the same type of equipment. If unknown, model default information for each type of equipment will be used. If equipment is not included specifically in the table, please be sure to provide, at a minimum, the anticipated horsepower.

Equipment	Make/Model	Electrically Powered?	Horsepower (HP)
Air Compressors	TBD	No	150
Backhoes	TBD	No	350
Bore/Drill Rigs	TBD	No	700
Cement and Mortar Mixers	TBD	No	6
Concrete/ Industrial Saws	TBD	No	33
Compactor	TBD	No	TBD
Cranes (Mobile)	TBD	No	350
Cranes (Tower)	TBD	Yes	150
Crawler Tractors	TBD	No	410
Crushing/ Proc. Equipment	TBD	No	
Dumpers/ Tenders	TBD	No	325
Excavator	TBD	No	385
Forklifts	TBD	No	210
Generator Sets	TBD	No	10
Graders	TBD	No	185
Loaders	TBD	No	120
Off-Highway Tractors	TBD	No	
Off-Highway Trucks	TBD	No	

Equipment	Make/Model	Electrically Powered?	Horsepower (HP)
Pavers	TBD	No	74
Paving Equipment	TBD	No	
Pumps	TBD	No	73
Rollers	TBD	No	40
Rough Terrain Forklifts	TBD	No	
Rubber Tired Dozers	TBD	No	
Rubber Tired Loaders	TBD	No	
Scraper	TBD	No	330
Signal Boards	TBD	No	
Skid Steer Loaders	TBD	No	
Surfacing Equipment	TBD	No	
Sweepers/ Scrubbers	TBD	No	
Tractors/Loaders/Backhoes	TBD	No	
Trenchers	TBD	No	41
Welders	TBD	No	
Other (Specify)			
Concrete Truck	TBD	No	
Pile Hammer	TBD	No	

Additional equipment Notes:

20. Will pile-drivers or other high-impact equipment be required during project construction? If so, when in the construction schedule would it occur?

a. When would high-impact equipment bee required during the project?

From: 01/01/2023_ to: 05/09/2025
Total number of days: 742

Additional high-impact equipment notes: Duration includes the demolition phase of the existing structure and the construction of the foundations for the new hospital. The foundation consists of a combination of pile caps and a thick mat foundation.

21. Worker commuting:

What is the approximate *average* one-way trip distance that workers will travel when commuting to the construction site? 30 Miles

22. Cleaner Construction Equipment: Projects requiring a construction health risk assessment typically need to utilize cleaner equipment to meet health risk standards. HBW

Can the Project specify the use of heavy-duty diesel equipment over 50 HP certified to the U.S. EPA/CARB Tier 3 and/or Tier 4 emissions standards in construction bid documents?

____ No ____ Tier 3 ____ Tier 4 Interim ____ Tier 4 Final X Unknown

23. Electric or Alternative-Fueled Construction Equipment

Identify heavy-duty equipment that would be electric or alternative-fueled rather than diesel-fueled (typically Tower Cranes, Pumps, Welders, etc., be sure to identify the type of fuel for each).

List Electric or Alternative Fueled Equipment: Forklift (propane), Tower Crane (Electric)

Would electric pole power be available on the Project Site?

____ Yes X No ____ Unknown

24. Dust Control

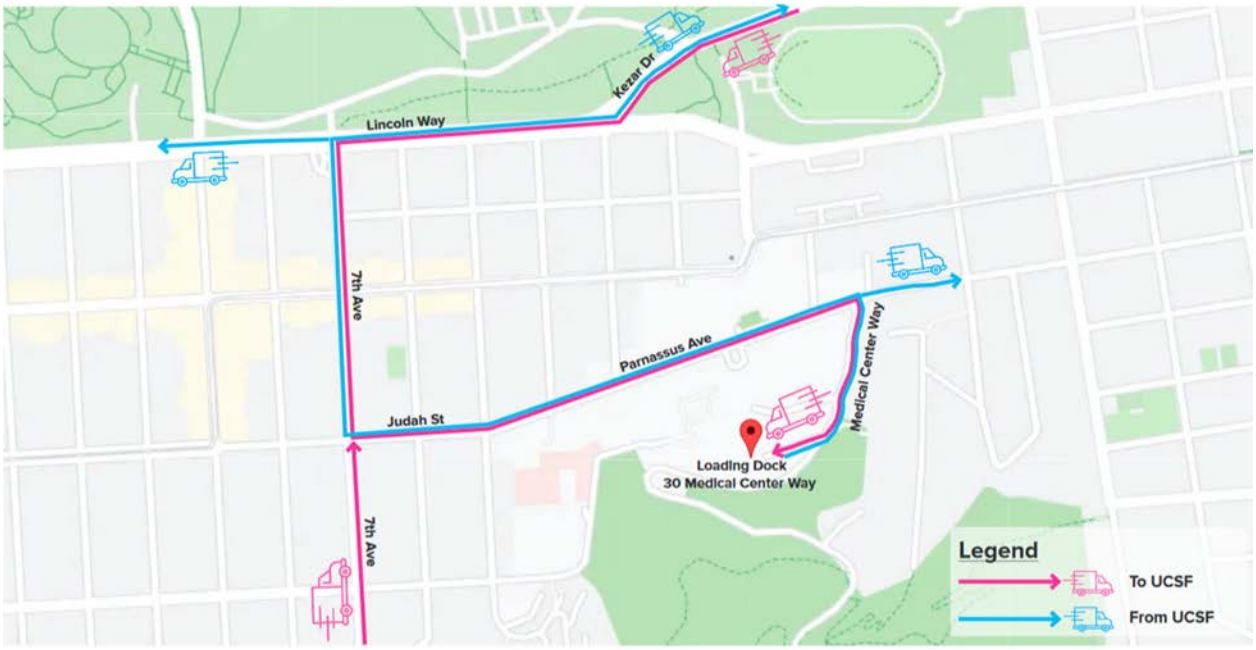
The analysis will assume standard dust control (such as watering three times daily).

List any additional dust control measures (e.g., soil stabilizers, tarps covering stockpiles, additional watering, rumble strips/watering strips at haul truck entrances/exits, use of street sweepers):

Additional Dust Control Measures: Scaffolding with netting will be placed between the existing hospital and the construction site.

Additional Construction Details

I) Delivery Truck Route along Parnassus Avenue.

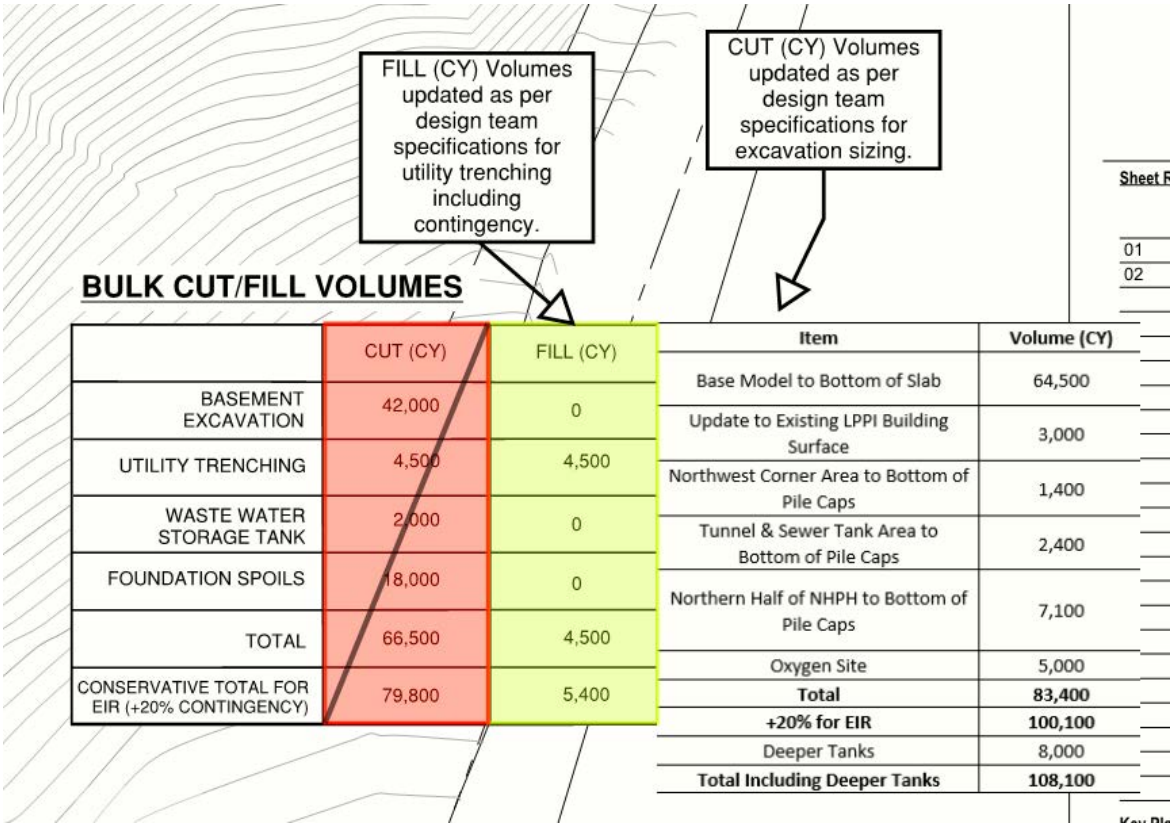


A. Trucks will be using the East exit to the Parnassus Site and will be exiting South towards the lower Bay Area.

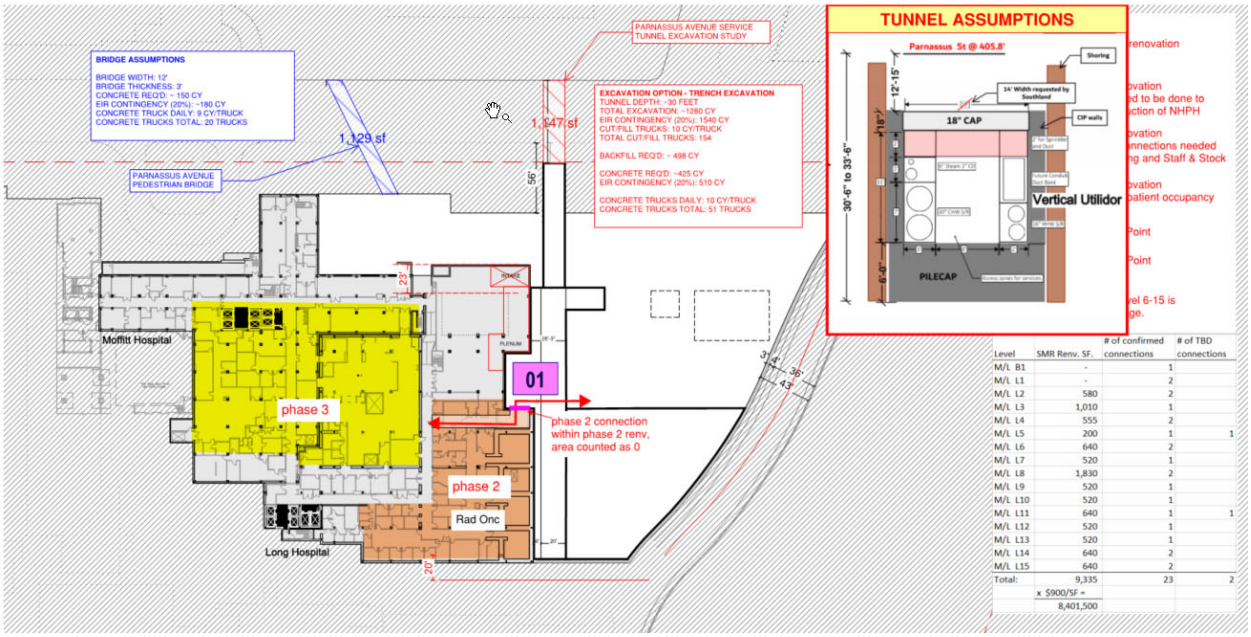
B. Blue Route Leaving East on Parnassus: 100%

C. Blue Route Leaving West on Parnassus: 0%

II. Excavation Assumptions

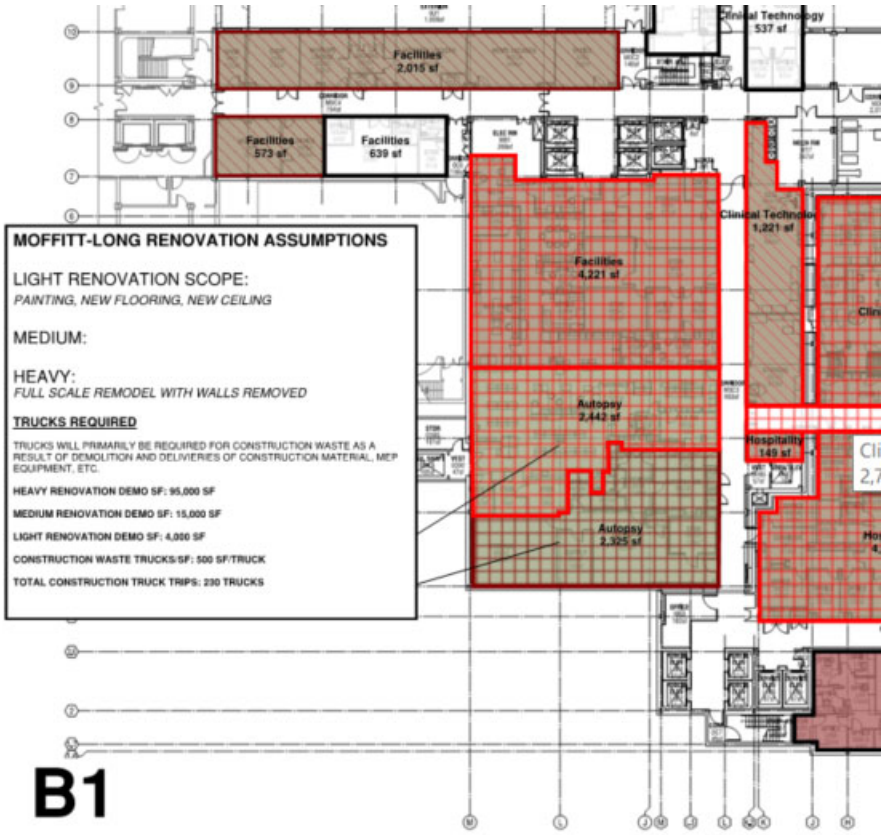


III. Irving St. Arrival Bridge and Tunnel Assumptions

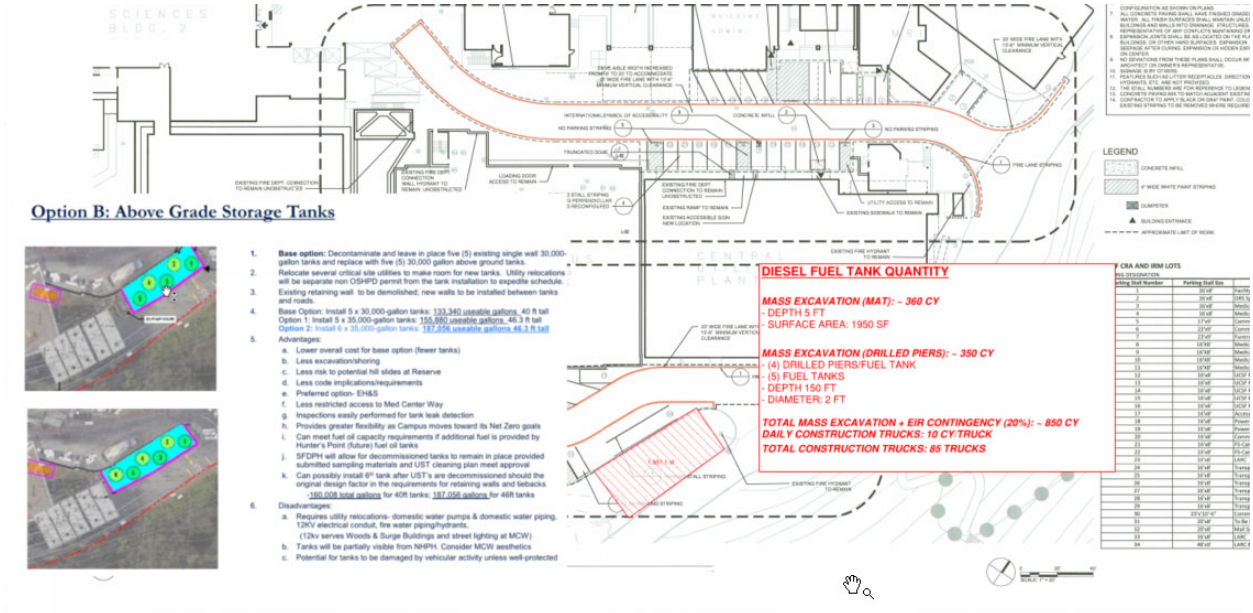


Level	SMR Renv. SF.	# of confirmed connections	# of TBD connections
M/L B1	-	1	
M/L L1	-	2	
M/L L2	580	2	
M/L L3	1,010	1	
M/L L4	555	2	
M/L L5	200	1	1
M/L L6	640	2	
M/L L7	520	1	
M/L L8	1,830	2	
M/L L9	520	1	
M/L L10	520	1	
M/L L11	640	1	1
M/L L12	520	1	
M/L L13	520	1	
M/L L14	640	2	
M/L L15	640	2	
Total:	9,335	23	2
	x $900/SF =		
	8,401,500		

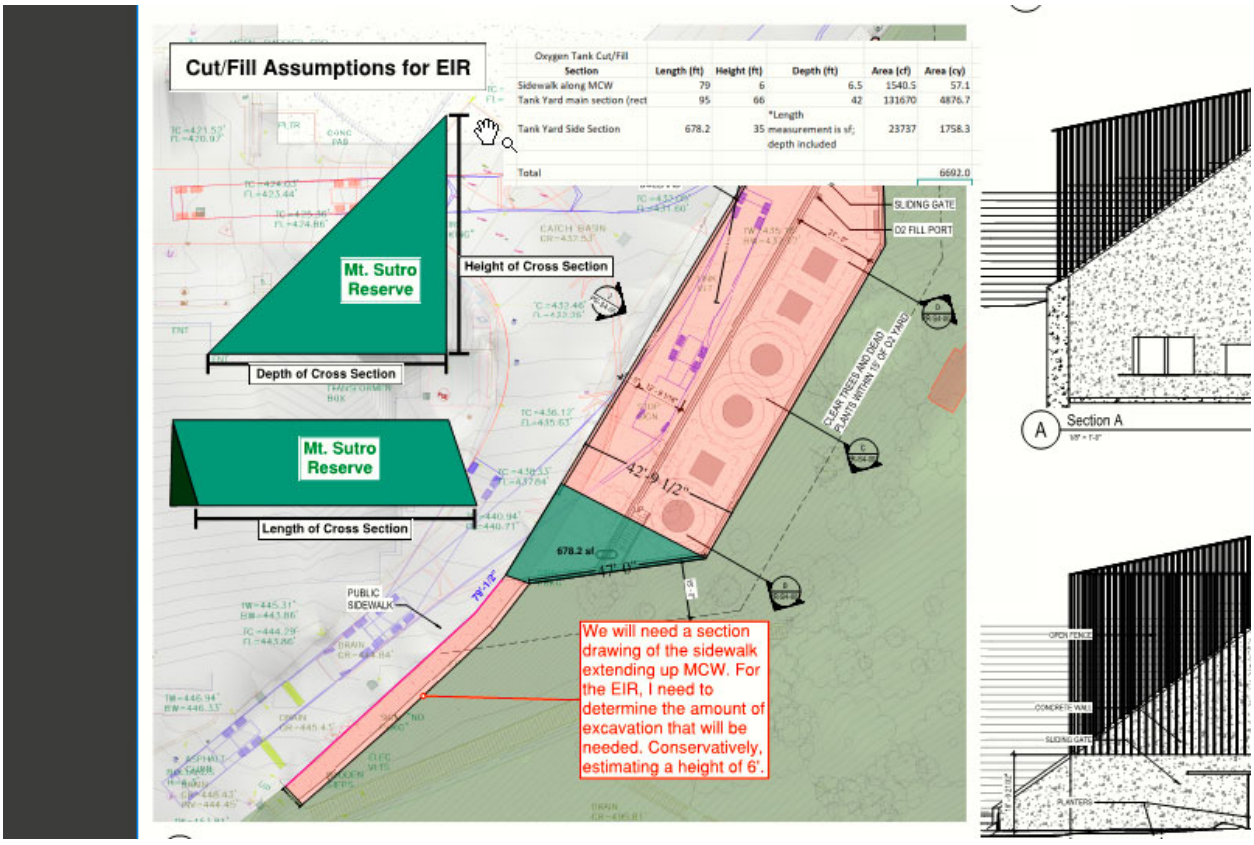
IV. Moffitt Long Renovations Assumptions



V. Diesel Fuel Oil Tank project assumptions



VI. Medical Gas Tank Assumptions (Oxygen Tank Yard) – Site Make Ready project.



Appendix HYD-A
UCSF New Hospital and Parnassus Heights Storm Drainage Design Report

USCF

New Hospital at Parnassus Heights

Storm Drainage Design Report

Final | December 6, 2021

Job number

Arup North America Ltd
560 Mission Street
Suite 700
San Francisco, CA 94105 USA
www.arup.com

ARUP

Document verification

ARUP

Job title		New Hospital at Parnassus Heights			**Job number**
Document title		Storm Drainage Design Report			**File reference**
Document ref					
Revision	**Date**	**Filename**	EIR Storm Drain Design Report.docx		
Draft 1	July 19, 2021	Description	First draft		
			Prepared by	Checked by	Approved by
		Name	Alex Murray	Dmitrijs Obolevics	Sheba Hafiz
		Signature			
Draft 2	Nov. 24, 2021	Filename	Storm Drain Design Report R2.docx		
		Description	Second draft with updated watershed and storage options		
			Prepared by	Checked by	Approved by
		Name	Alex Murray	Aihua Tang	Sheba Hafiz
		Signature			
Draft 3	Dec. 3, 2021	Filename	Storm Drain Design Report R3.docx		
		Description	Third draft with incorporating ESA comments		
			Prepared by	Checked by	Approved by
		Name	Alex Murray	Aihua Tang	Sheba Hafiz
		Signature			
Final	Dec. 6, 2021	Filename	Storm Drain Design Report.docx		
		Description	Final report		
			Prepared by	Checked by	Approved by
		Name	Alex Murray	Aihua Tang	Sheba Hafiz
		Signature			

Issue Document verification with document ✓

Contents

1 Executive Summary

University of California, San Francisco (UCSF) plans to construct a New Hospital and related improvements, collectively referred to as the New Hospital Parnassus Heights (NHPH) project. The NHPH project will include development of a 900,000 gross square foot (gsf) New Hospital, renovation of Moffitt and Long Hospitals; widening of Medical Center Way (MCW) in the vicinity of the New Hospital; replacement of diesel fuel tanks and medical gas storage tanks; vegetation management and slope stabilization improvements; and construction of a proposed pedestrian bridge and tunnel across Parnassus Avenue.

The proposed NHPH project would increase the daily population on the campus site and the daily diurnal wastewater flows from the campus site. Although the New Hospital site is already largely impervious, the project would increase the total impervious area and stormwater flows from the Parnassus Heights campus site would be expected to increase due to the NHPH. Both the increased wastewater and stormwater would be added to the existing combined flows that are currently discharged from the campus site to the San Francisco Public Utilities Commission's (the "SFPUC"") combined sewer system (CSS). To avoid an increase in CSS discharges from the campus site that could result in capacity issues, downstream flooding or water quality impacts, UCSF has established the following requirements for the proposed NHPH. The proposed project shall:

- Avoid increasing the likelihood of surcharges by exceeding the capacity of the City's Combined Storm and Sewer System (CSS),
- Avoid increasing the extent or duration of ponding or overland flow by exceeding the capacity of the City's CSS, and
- Avoid discharges to the City's CSS that increase frequency, duration, or volume of combined sewer discharges to the receiving waters.

An InfoWorks ICM hydraulic model was developed to study existing and future conditions of the NHPH site and determine storage volumes for storm and sewer flows required to meet the conditions listed above. Results of the modeling indicate that a storage volume of 150,000 gallons is required to detain stormwater on the campus site to meet these requirements.

2 Introduction

University of California, San Francisco (UCSF) plans to construct a New Hospital and related improvements, collectively known as the New Hospital Parnassus Heights (NHPH) project. The NHPH project components would have the potential to affect stormwater and/or wastewater conditions include:

- Development of a 900,000 gross square foot (gsf) New Hospital,
- Widening of a section of the existing Medical Center Way (MCW) from approximately 28’ to 36’ to include 5’ sidewalks on both sides and 13’ drive lanes,
- Relocation of existing drainage system and other utilities, and
- Provision of a new Medical Gas Storage facility to the east of MCW adjacent to the New Hospital loading dock.

The Langley Porter Psychiatric Institute (LPPI) building, and three small support structures are located on the site of the New Hospital. The demolition and removal of these buildings were previously planned under the 2014 Long Range Development Plan. Accordingly, the demolition and removal of these buildings are not included in the NHPH project and will be completed separately from and ahead of the NHPH project.

Refer to Figure 1 for the future layout of the New Hospital, MCW, and the Medical Gas Storage facility site. The areas that include the New Hospital, the portion of the MCW that will be widened, and the medical gas storage site are collectively referred to as the “Project Site” in this report.

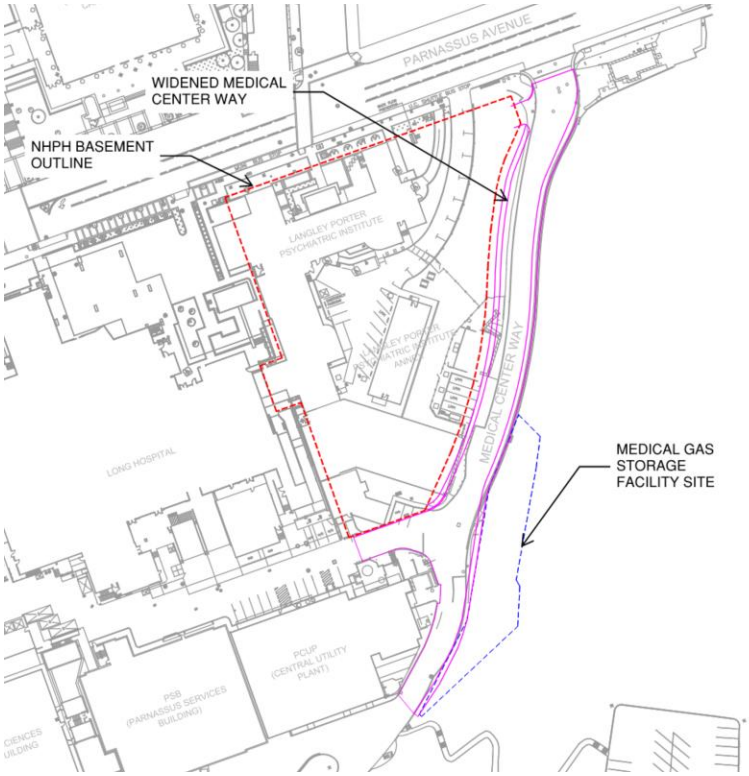


Figure 1 Future Layout of New Hospital, MCW and the Medical Gas Storage Facility Site Approximate Boundaries

Arup is coordinating and designing utilities and infrastructure for the future New Hospital building, including the stormwater system.

Arup completed the preliminary study assessing the existing and future conditions of the Project Site and analyzed potential storage tanks and their parameters to meet several stormwater management requirements.

Arup analyzed the Project Site by developing InfoWorks ICM hydraulic models representing existing and future conditions.

3 Combined Sewer Management Criteria

The mitigation design criteria for stormwater are that the NHPH will:

- Avoid increasing the likelihood of surcharges by exceeding the capacity of the City's Combined Storm and Sewer System (CSS).
- Avoid increasing the extent or duration of ponding or overland flow by exceeding the capacity of the City's CSS.
- Avoid discharges to the City's CSS that increase frequency, duration, or volume of combined sewer discharges to the receiving waters.

These requirements are interpreted as meaning that combined stormwater and sewer runoff peak flow and volume post development will not exceed pre-development conditions for the 1- and 2-year 24-hour design storms. This is also consistent with the San Francisco Public Utility Commission's (SFPUC) stormwater management criteria, which requires that the peak flows and volume not exceed pre-development conditions for these design storms where the existing project site has an existing imperviousness of less than fifty (50) percent. The project site, as viewed by SFPUC, is the entire campus, which has an existing imperviousness of less than fifty (50) percent.

To meet these requirements, modeling must prove that future CSS peak flows and volume discharged do not exceed existing conditions. The results from this modeling effort will also be incorporated into SFPUC CSS model to see if there are any increase in discharges to receiving water.

Arup modeled and assessed the New Hospital, MCW, and medical gas storage facility sites together in one comprehensive model under:

- Existing conditions
- Future conditions without stormwater storage
- Future conditions with stormwater storage to meet peak flow and volume reduction requirements

We assume that because there are limited opportunities to reduce the runoff volume through infiltration or irrigation, UCSF will be permitted to store runoff during the storm to meet the total volume reduction requirement and then discharge the stored water after 24 hours.

4 Existing Site Conditions

4.1 Existing CSS Infrastructure

The existing site condition is analyzed based on information provided through previous studies and as-built drawings to determine the existing drainage and sewer infrastructure at the Project Site. Arup reviewed the UCSF Parnassus Heights Utilities Condition Assessment Report completed by BKF[1] and the following record drawings obtained from UCSF:

- Sheets C-4.1 to C-4.4 of UCSF Project M3444 Bridging Document by Sandis (2008).
- Sheet P-1 of the Parnassus Campus Sewer Site Plan drawn by J. Hughes (1999).

- Sheets C4 and C5 of the Central Utilities Pant Parnassus Avenue Campus San Francisco, California, New Site Utilities As-Built by Walsh Construction Company (1995).
- Fuel Oil Storage Facility, Project 926002, by Sysku & Hennessy Engineers (1980).

The existing drainage system within the Parnassus Heights campus site carries combined flow as it collects storm runoff during rainfall events as well as sanitary flows from buildings. There are two (2) main combined storm sewer (CSS) lines running through the New Hospital site: west of LPPI and along MCW. Both sewer lines comprise up to 15" diameter pipes. Pipe materials include vitrified clay (VC), polyvinyl chloride (PVC), cast iron (CI) and steel.

The CSS line running west of LPPI mainly conveys storm and sanitary flows collected north of MCW. The CSS line running along Medical Center Way collects and conveys flows from south of MCW, including from the hillside.

The combined flows are discharged to the existing 30" SFPUC CSS main running east along Parnassus Avenue. There are two (2) additional smaller connections from the Site to SFPUC CSS main that mostly contain sanitary flows. The layout of the existing drainage infrastructure is depicted on Figure 2.

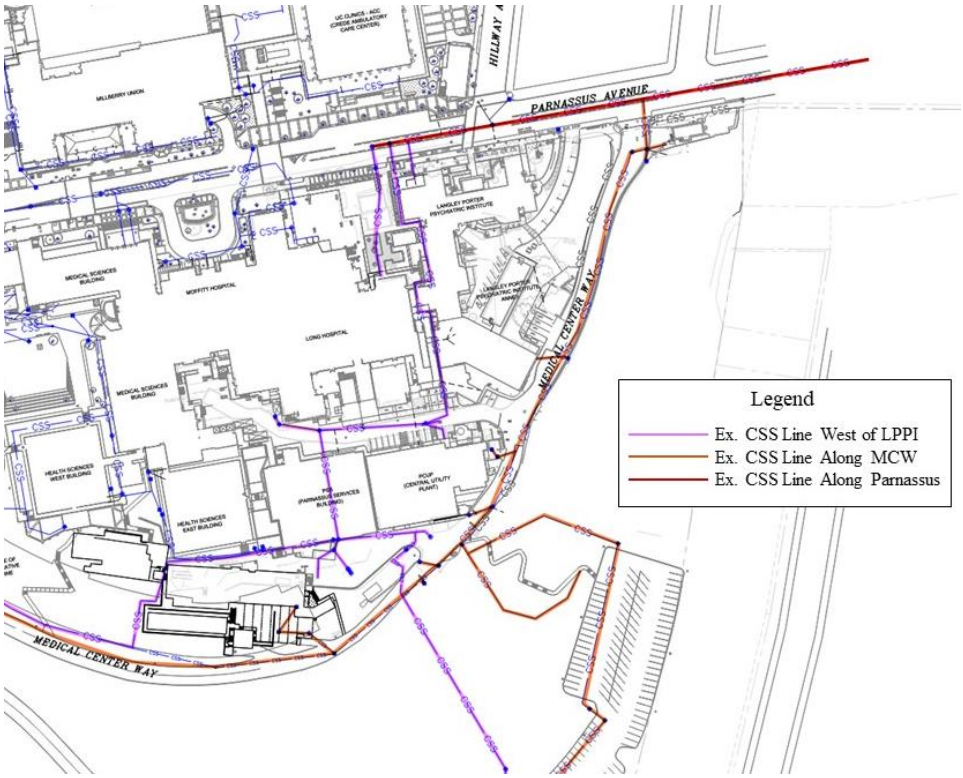


Figure 2 Existing CSS Pipe Network

The elevation data shown in the record drawings was converted from the old City Datum to CCSF-VD13 vertical datum by adding 11.195'.

4.2 Existing Watershed

The Project Site is part of and at the downstream end of a larger watershed that discharges into the SFPUC CSS main on Parnassus Avenue. The campus site CSS network that conveys stormwater from this watershed to the SFPUC CSS main is shown in Figure 3. This watershed is delineated based on the City of San Francisco five (5) foot contours downloaded from DataSF and information gathered from site walks[2]. The total area of this watershed is approximately 21.6 acres.

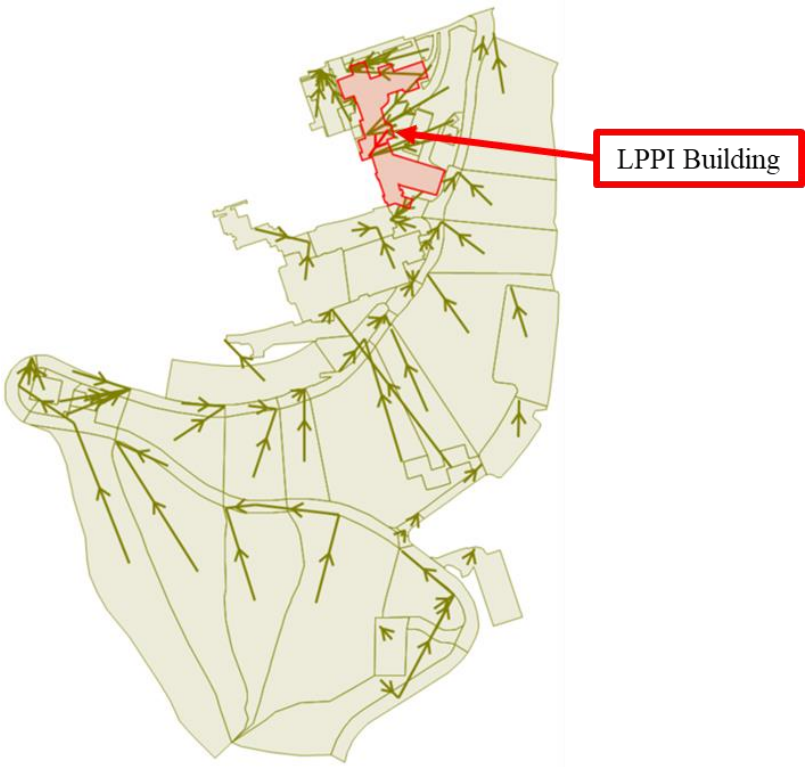


Figure 3 Existing Watershed

4.2.1 Existing Land Cover

The existing land cover assessment uses the aerial imagery and topographical survey provided to Arup.

Most of the existing New Hospital site consists of impermeable roadways, pavements, and roofs. Permeable open spaces comprise approximately 18% of the project area.

The assumed existing land cover at LPPI is shown in Figure 4.

EXISTING AREAS			
PERVIOUS	ROW TREE WELLS	1,783	SF
	LANDSCAPING	13,948	SF
IMPERVIOUS	ROOF	33,510	SF
	PAVEMENT	36,866	SF
TOTAL		86,107	SF

Figure 4 Existing Land Cover at LPPI/New Hospital Site

The existing MCW is completely impervious and the bordering area of Mount Sutro where the future road will be expanded into has head tree and underbrush cover. The existing area where the Medical Gas Storage Facility will be place is located on a currently completely pervious area of Mount Sutro as well.

5 Future Site Conditions

5.1 Future CSS Infrastructure

The existing CSS infrastructure will need to be reconfigured to accommodate construction of the New Hospital building.

Arup recommends that the existing 15” CSS that runs along the western side of LPPI be rerouted to run along MCW and connect directly to the existing 30” SFPUC CSS main in Parnassus Avenue. The existing connections to the 15” CSS pipe from LPPI will be demolished with the existing LLPI building. Two (2) new sanitary sewer laterals from the New Hospital will be connected to a new CSS pipe section on the east side of the New Hospital.

The routing and connections of the existing 15” CSS line that runs down the east side of MCW will mostly remain unchanged except for one (1) short section of aging pipe that will be replaced. Figure 5 shows the future CSS layout.

5.1.1 Future Stormwater Storage

To achieve project requirements to reduce peak flow and runoff volume, Best Management Practices (BMP) are proposed to be utilized within the design.

Detention storage using the existing fuel tanks located along MCW and a new detention storage tank at the existing ammonia tank site are proposed. These locations were selected because of the limited space on the New Hospital site and the Department of Health Care Access and Information (HCAI) regulations that prevent stormwater from being reused inside the hospital.

The New Hospital basement was initially identified as a preliminary location for the future storage tank(s). This location is restricted by limited space in the basement and the inherent risk from storing large volumes of water within an operating building, so alternative sites were explored. The UCSF / design team has identified potential cost and space saving opportunities by identifying detention opportunities by reusing the existing diesel fuel tanks and space at the ammonia tank site to construct a new stormwater holding tank (Figure 5).

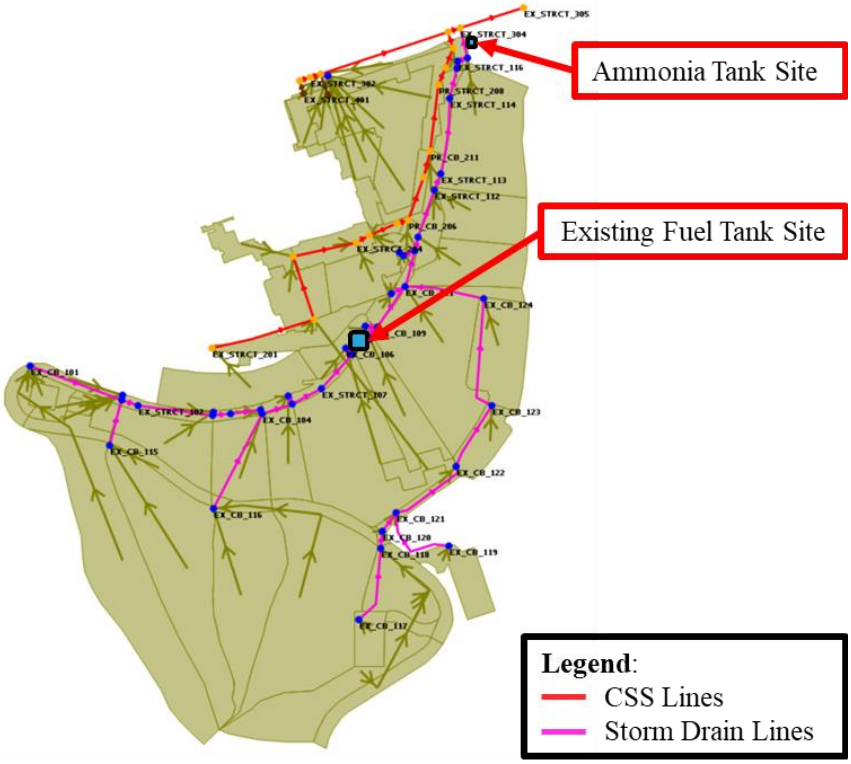


Figure 5 Future Pipe Network and Watershed

There are five (5) 30,000-gallon fuel tanks underneath MCW, adjacent to the Dolby building that are available for stormwater management. Conservatively, it is assumed only four (4) of these tanks will be useable for storage, giving 120,000 gallons of storage. Based on the existing CSS and fuel tank elevations, this storage would be a gravity system, and no pumping would be needed.

A storage tank is proposed at the existing ammonia tank site as well. The existing ammonia tank and building on the eastern side of the intersection of MCW and Parnassus Avenue will be demolished, and about 600 ft^2 of space will be set aside for future stormwater storage. The volume and depth required for this tank is determined with InfoWorks ICM modeling effort. The existing CSS elevations will not allow for gravity flow and stored water will need to be pumped to the City's sewer main after the storm.

5.2 Future Watershed

The watershed boundary under the future conditions will be the same as that under the existing condition. With the proposed NHPH project, the land cover in the watershed will change at the future New Hospital building site, Medical Gas Storage Facility site, and along MCW. Proposed green roofs offset any increase in impervious area, resulting in an overall reduction of 0.1-acres of impervious area. Table 1 compares the existing and future watershed land cover.

Table 1 Watershed Land Cover Comparison

Land Cover	Existing Conditions (acres)	Future Conditions (acres)
Forest	13.8	13.6
Landscaping / Green Roof	0.4	0.7
Road / Roof	7.4	7.3
Total	21.6	21.6

5.2.1 New Hospital Site

The land cover under future conditions was assessed based on the proposed roof extent for the New Hospital. The future roof will be impervious with portions constructed as green roofs on levels 6, 8 and 10.

5.2.2 Medical Gas Storage Facility Site

The new Medical Gas Storage Facility site will be located south of the New Hospital along MCW. The total area of the site is approximately 6,000 ft^2. Under the existing condition, the site area is completely pervious. Under the future condition, the site is proposed to be fully impervious.

5.2.3 Medical Center Way

MCW will be widened by approximately 8' between the intersection with Parnassus Avenue and the New Hospital loading dock. Additional catch basins are planned to be added along the western side of the road to handle increased flows from the widening of MCW.

6 Sewer Flow and Rainfall Event Data

6.1 Sewer Flow Data

Two datasets were used to determine the existing sewer flows in the study area, a flow monitoring dataset and historical monthly water demand data. The flow monitoring dataset was used for all existing sewer flows besides LPPI. The LPPI sewer flow could not be separated out from the flow monitoring data, so monthly historical water demand data was used to determine sewer flows demands for LPPI

Flow monitoring was performed at the Project Site from November 9, 2020, to March 7, 2021. The rainfall and sewer depth were monitored at ten (10) different locations within the Project Site. Figure 6 depicts locations where sewer flows and rainfall depth were monitored.

The monitoring data was reviewed and used to determine existing sanitary flows coming from buildings within the Parnassus Heights campus site. This data was also used to calibrate the "existing conditions" hydraulic model. See Table 2 for the existing conditions sewer flows.

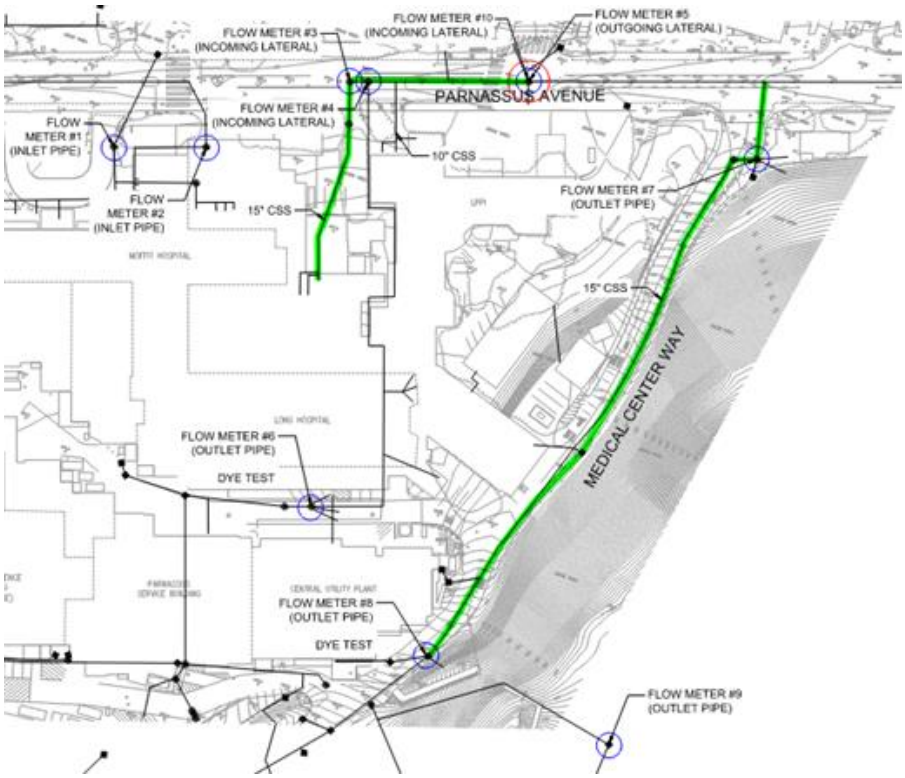


Figure 6 Rainfall and Sewer Depth Monitoring Locations

Table 2 Sewer Flows within Study Area

Sewer Flow Location	Sewer Flow from Flow Monitoring Data (cfs / gpm)	Projected Sewer Flow from Water Demand Data (cfs / gpm)
Moffit	0.054 / 69	N/A
South of LPPI	0.055 / 25	N/A
LPPI	N/A	0.008 / 3.4
New Hospital (Replaces LPPI in Future Conditions)	N/A	0.193 / 87

The historical monthly water demand data from 2018 was used to determine sewer flows for LPPI. It was assumed ninety (90) percent of water used is returned to sewers (Ref: SFPUC website). This yielded similar values for average daily flow per bed for LPPI as the flow monitoring data for the Moffit building. This per bed sewer flow was also used to estimate the future New Hospital sewer flow.

In future conditions, the LPPI building sewer flow is removed and the New Hospital flow is added. It should be noted that the New Hospital sewer flow is much larger than the LPPI building (0.193 vs. 0.008 cfs).

6.2 Design Rainfall Events

The existing and future conditions with the proposed project were analyzed based on two (2) design storm events:

- SFPUC 1-year 24-hour storm event, and
- SFPUC 2-year 24-hour storm event.

The 1- and 2-year 24-hour rainfall depths and distributions were obtained from SFPUC[3]. The data came with a temporal distribution predefined by SFPUC. The 1-year peak rainfall intensity provided by SFPUC is 2.65 inches/hour and the total rainfall depth is 1.96 inches. The 2-year peak rainfall intensity provided by SFPUC is 1.96 inches/hour and the total rainfall depth is 2.36 inches.

7 Analysis

InfoWorks ICM 9.5 was used to model and analyze the existing and future conditions throughout the Project Site. This software was selected and utilized in this study as SFPUC uses InfoWorks ICM 9.5 for modeling of the overall City's CSS systems.

7.1 Baseline Model

7.1.1 Existing CSS Infrastructure

The existing conditions model was developed as a baseline model for this study using the CSS information available. At locations where no information existed, interpolations were done from available information or assumptions were made with engineering judgment. It should be noted that not all lateral connections to the main CSS lines were incorporated due to lack of available information.

The stormwater drainage areas (subcatchments) were delineated according to the locations of existing catch basins, 5 (five) foot contours from DataSF, and information gathered from site walks.

The hydraulic model representing existing site conditions is shown on Figure 7.

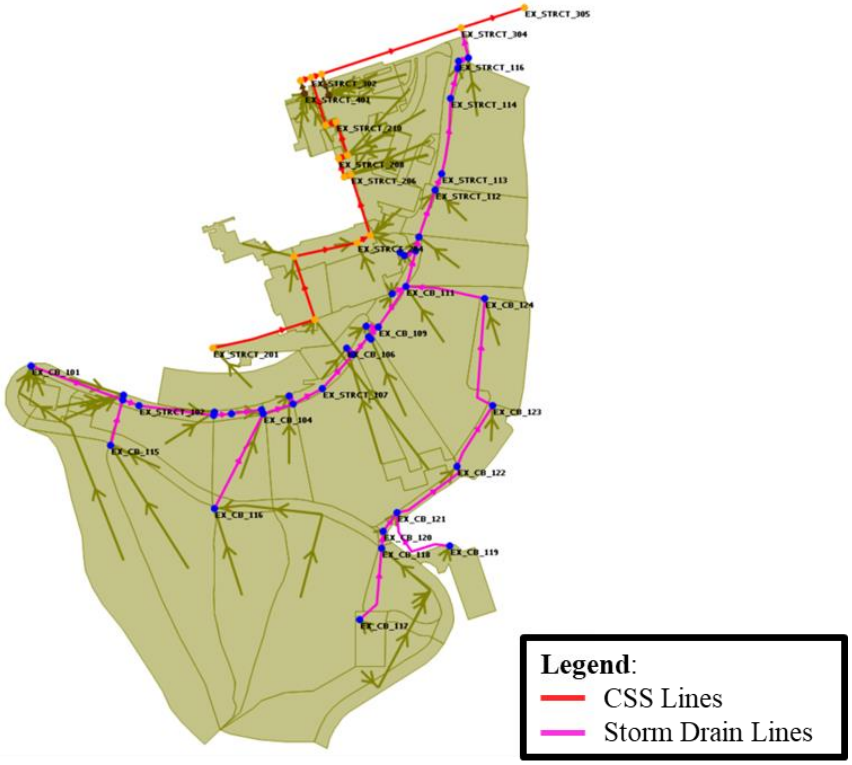


Figure 7 Modeled Existing Conditions with Watershed and Infrastructure

The Curve Number (CN) runoff volume type and Soil Conservation Service (SCS) Unit routing methods were used to estimate runoff hydrographs from each subcatchment.

Based on the Final Geotechnical Data Report produced on January 15, 2021, by Rutherford + Chekene, the following soil layers are found within the Parnassus Heights campus site:

- Artificial fill
- Dune sand
- Colma Formation

The Dune Sand and Colma Formation consist of predominantly fine sand that correspond to Hydrological Soil Group (HSG) C.

Arup reviewed information available on the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey that suggests that the hillside located south of the Project Site consists of Candlestick-Kron-Buriburi complex, which is also categorized under HSG C. Taking into consideration both these data references, HSG C was used for selection of CN's.

USDA NRCS Technical Release 55 (TR-55) Urban Hydrology for Small Watersheds Manual was used to determine CN's for each delineated subcatchment taking into consideration applicable land cover and selected HSG.

Time of concentrations for all subcatchments were calculated with a minimum value of 5 minutes[4].

7.1.2 Model Calibration

Following the development of InfoWorks ICM hydraulic model representing existing site conditions, Arup calibrated the model by utilizing the rainfall and sewer depth data obtained during the flow survey.

The model calibration was undertaken based on the following metered locations:

- Flow Meter #3 (incoming lateral)
- Flow Meter #4 (incoming lateral)
- Flow Meter #5 (outgoing pipe)
- Flow Meter #6 (outlet pipe)
- Flow Meter #7 (outlet pipe)
- Flow Meter #8 (outlet pipe)

The subcatchments time of concentration values were calibrated, with a minimum of five (5) min, to match the model flow depths to the flow survey data. After calibration, the baseline model represents the existing site conditions reasonably well based on the available information (Figure 8).

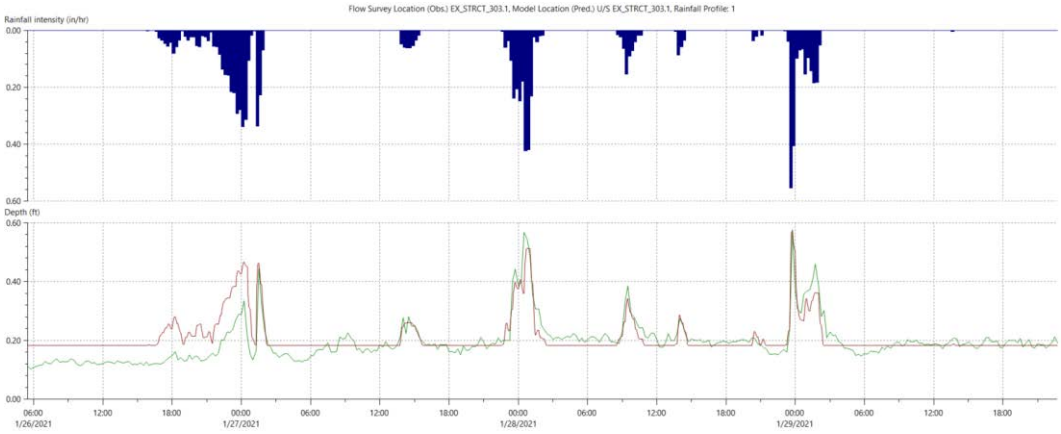


Figure 8 Example of the Model Calibration Plot (Flow Meter #5) (comparing observed [green] and predicted [red] flow depth in 30" CSS main along Parnassus Avenue)

7.2 Future Model

The future hydraulic model was developed from the calibrated existing hydraulic model and revised with proposed changes. Based on the future design information available, the following has been incorporated within the future hydraulic model:

- The existing 15" CSS pipe section along the west side of LPPI is removed.
- A new 15" CSS pipe is added to relocate flow along the west side of LPPI to MCW.
- All subcatchments located within the New Hospital extents are designated as impervious or vegetated roofs and are routed to the Parnassus Avenue CSS main.
- The LPPI sewer flow (0.008 cfs) is removed from the model, and
- The new sanitary sewer flow from NHPH is set to be 0.193 cfs.

The hydraulic model representing the future site conditions is shown on Figure 9.

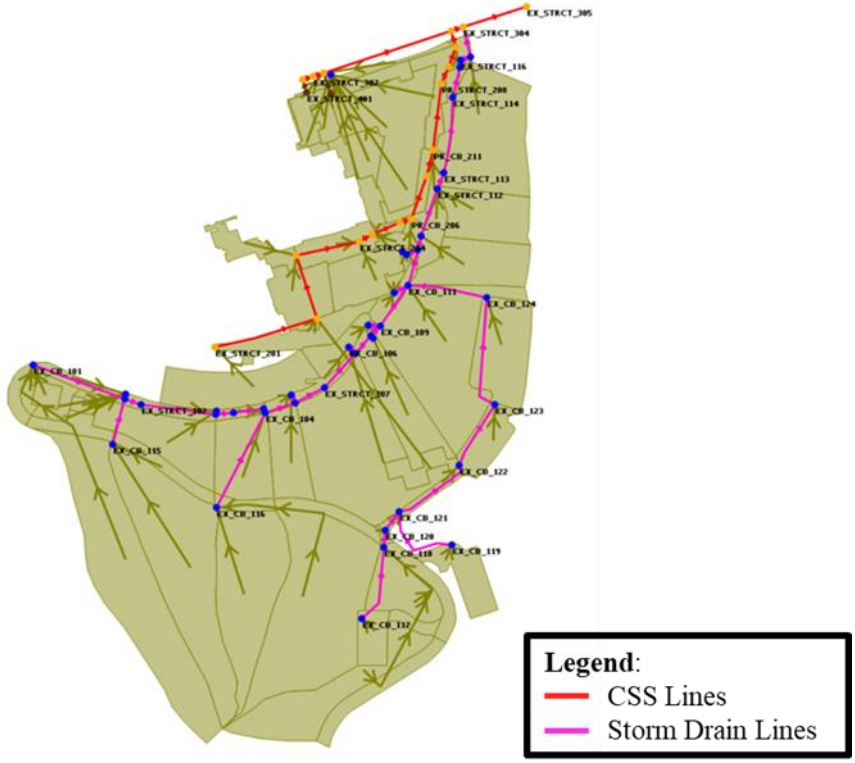


Figure 9 Future Modeled Pipe Network and Watershed

Several scenarios of the future model were developed to represent different compliance scenarios, including 1- and 2-year 24-hour stormwater events, with and without proposed stormwater storages.

7.3 Results

The existing and future hydraulic models were simulated for two (2) design storm events: SFPUC 1- and 2-year 24-hour rainfall events.

SFPUC 1- and 2-year 24-hour storm events were analyzed to determine the size and type of storage needed to meet the project's stormwater management criteria.

7.3.1 SFPUC 1- and 2-year 24-hour Storm Events

The objective of these simulations is to determine the future storage capacity to meet the project's stormwater management requirements.

The future model with no storage was used to determine the amount of storage required to match existing conditions. For the 1- and 2-year 24-hour storm events, 143,290 and 144,790 gallons are needed, respectively. The impervious area within the project site slightly decreased, however the sewer flow form the New Hospital greatly increased over the LPPI building, resulting in a net CSS flow increase. The CSS flow increase will be offset by future stormwater storage.

The required storage volume was rounded up to 150,000 gallons, and then detention storage was added to the future conditions model, splitting between the fuel tank site (120,000 gallons) and the ammonia tank site (30,000 gallons). The peak flow and volume discharged requirements are met with 150,000 gallons of storage. See Table 3 and Table 4 which show the peak flows and runoff values for the existing and future conditions hydraulic models with the 1- and 2-year 24-hour storm events.

Table 3 InfoWorks ICM Modeling Output: 1-year 24-hour storm event

Model scenario	Scenario Requirements	Peak Flowrate (cfs)	Total Runoff Volume (gal)	Storage Required (gal)	Conformance with project requirements?
Existing Condition	n.a	13.5	828,420	n.a	n.a
Future Conditions (no storage)	n.a	14.6	971,710	143,290	No
Future Conditions (with storage)	Peak flow and total volume reduction to meet existing condition	11.9	819,680 (120,000-gal storage at fuel tank site, 30,000-gal at ammonia tank site)	150,000	Yes

Table 4 InfoWorks ICM Modeling Output: 2-year 24-hour storm event

Model scenario	Scenario Requirements	Peak Flowrate (cfs)	Total Runoff Volume (gal)	Storage Required (gal)	Conformance with project requirements?
Existing Condition	n.a	16.7	908,870	n.a	n.a
Future Conditions (no storage)	n.a	17.8	1,053,660	144,790	No
Future Conditions (with storage)	Peak flow and total volume reduction to meet existing condition	14.6	902,220 (120,000-gal storage at fuel tank site, 30,000-gal at ammonia tank site)	150,000	Yes

8 Conclusion

Arup conducted an assessment to determine potential stormwater management design options for the NHPH project to conform with the project's stormwater management requirements.

The assessment included sizing and analysis of the proposed storage tank capacity under both the 1- and 2-year 24-hour storm events to meet the peak flow and volume reduction requirements set forth for the NHPH project.

The proposed storage tank capacities were analyzed with InfoWorks ICM hydraulic models. The model estimated peak flow and runoff volumes under the existing and future (no storage provided) conditions, and future conditions with the proposed storage. To meet the peak flow and volume reduction requirements set forth for the NHPH project, the following is needed:

- 150,000 gallons of total storage which includes,
    - 120,000 gallons at the existing fuel tank site, and
    - 30,000 gallons at the redeveloped ammonia tank site.

9 References

[1] BKF Engineers (2019). *Utilities Condition Assessment Report*. University of California, San Francisco: Parnassus Height Campus

[2] City of San Francisco (2019). *Elevation Contours - Five Foot Interval*. DataSF. https://data.sfgov.org/Energy-and-Environment/Elevation-Contours/rnbg-2qxw

[3] SFPUC (2020). *Design Storms: 1-year and 2-year 24-hour Design Storms*. Stormwater Requirements: Stormwater Control Plan (SCP) Materials and Resources.

[4] Caltrans (2020). *Highway Design Manual: Chapter 810 – Hydrology*.

Appendix HYD-B
UCSF NHPH Combined Sewer System Modeling Updates

UCSF NHPH

Combined Sewer System Modeling Updates

Meeting with UCSF
11/1/2021

ARUP

Updates since Oct 22, 2021

1. Expanded existing watershed
2. Maximized storage at Fuel Tanks
3. Assessed feasibility of removing NHPH storage tank
4. Added storage at Ammonia Tank Site to offset removing NHPH storage

CSS Conformance per CPHP EIR

Appendix HYD-B

Requirement	Interpretation	Modeling Tasks
1. Avoid increasing likelihood of surcharges by exceeding capacities of City's CSS	Stormwater runoff rate and volume post development will not exceed pre-development conditions for the 1- and 2-yr 24-hr design storms	Prove that Future CSS peak runoff and volume do not exceed existing conditions *-Completed by Arup*
2. Avoid increasing extent & duration of ponding or overland flow by exceeding capacities of City's CSS		
3. Avoid discharges to City's CSS that could increase frequency, duration, or volume of combined sewer discharges to receiving waters	Total volume of stormwater discharge during wet weather is decreased to offset flows from any increase in impervious surfaces and any increases in wastewater	Outputs from NHPH model to be incorporated into SFPUC's CSS model to see if any increase in discharges to receiving waters *-In Progress by Hydroconsult Engineers*

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CSS Conformance Scenario

Scenario	Design Storms	Peak Flow Reduction	Total Volume Reduction
CPHP EIR Conformance	1- and 2-yr 24-hr	**Combined sewer and stormwater** not to exceed existing condition	**Combined sewer and stormwater** not to exceed existing condition

- Assuming that we will be allowed to store flow during the storm to meet the total volume reduction requirement and then discharge after 24 hours

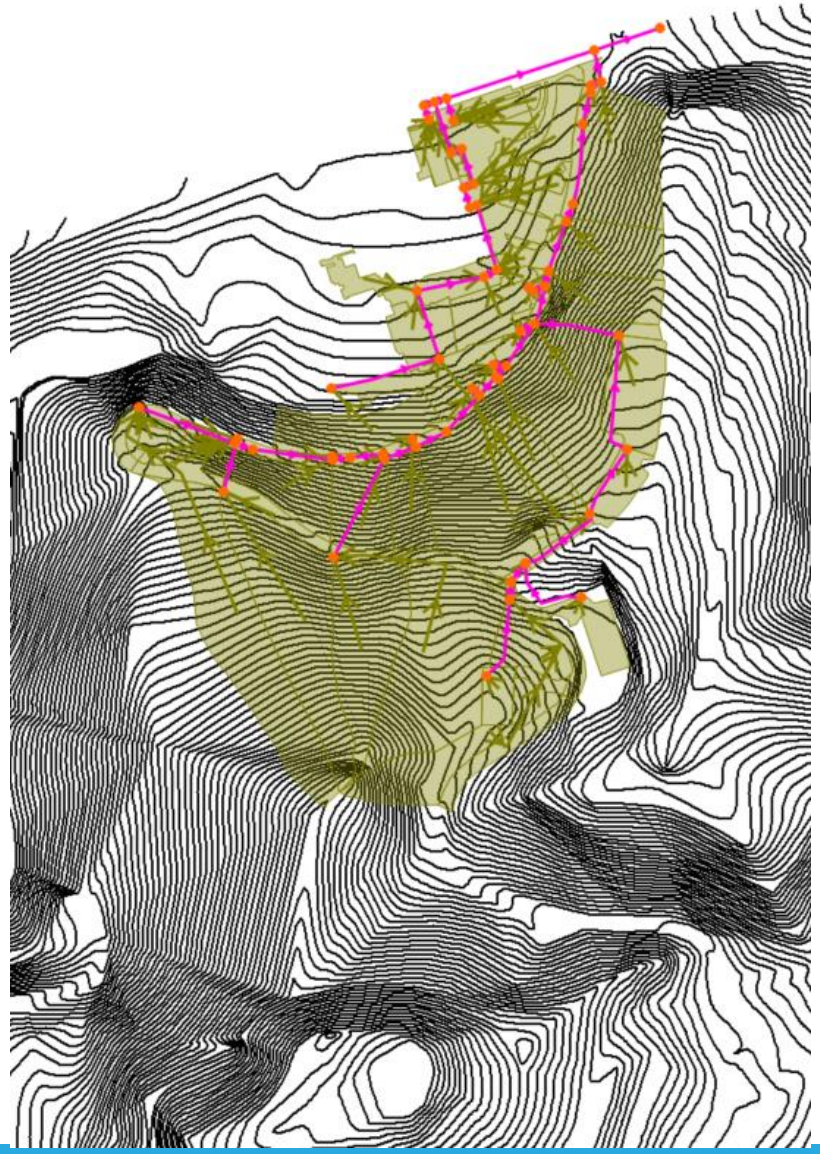
Existing Watershed

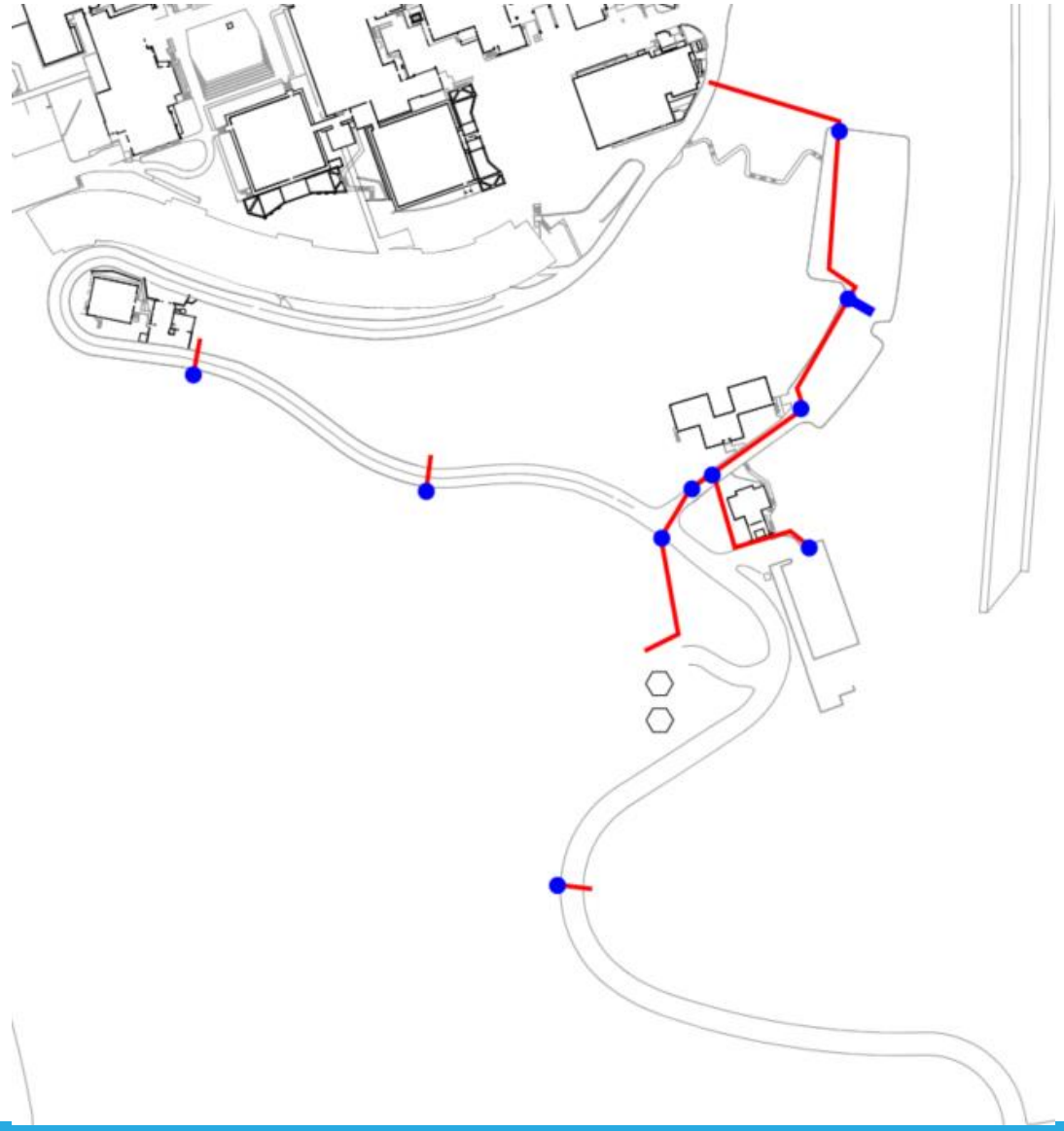
- Previous

- Updated

Existing Watershed

Appendix HYD-B

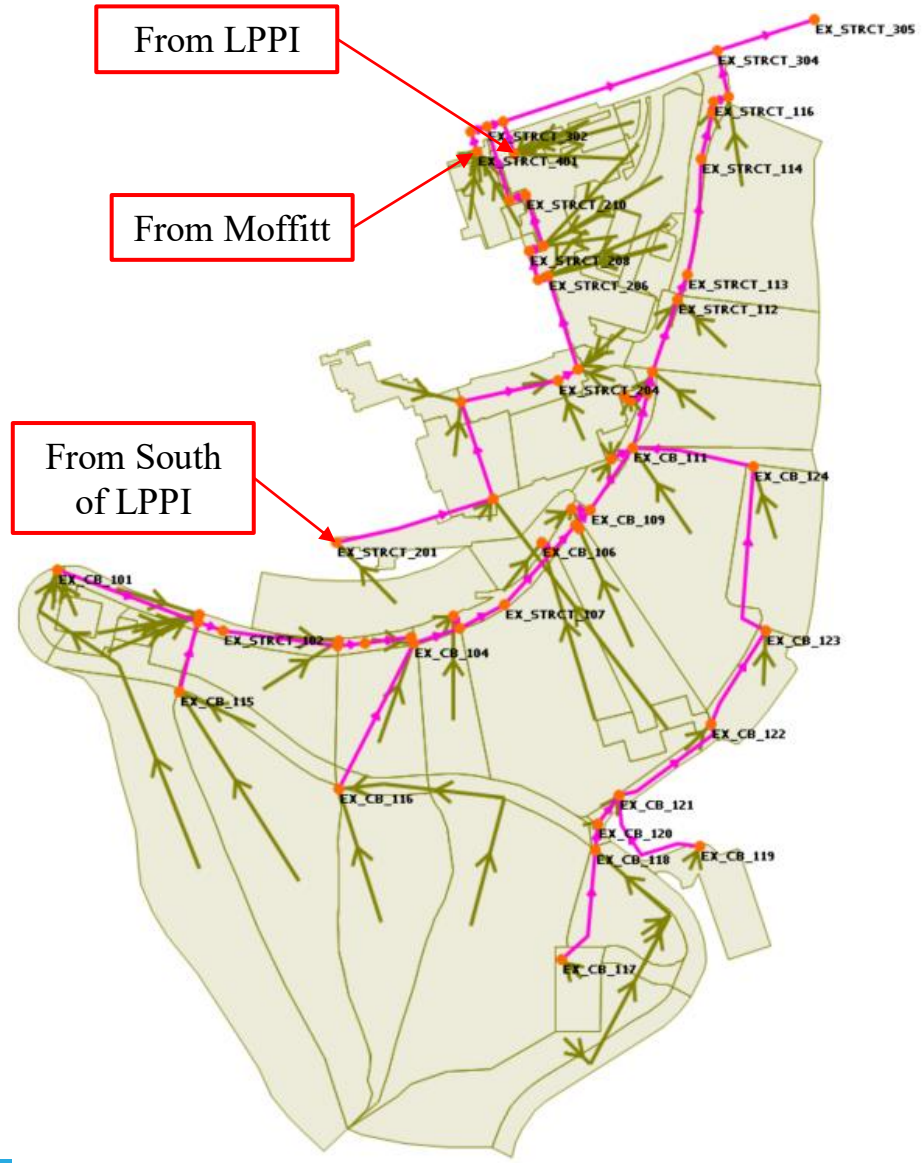




ARUP

Existing Condition Base Sewer Flows

Sewer Flow Location	Sewer Flow from Flow Monitoring Data (cfs / gpm)	Projected Sewer Flow from Water Demand Data (cfs / gpm)
Moffitt	**0.054 / 69**	N/A
South of LPPI	**0.055 / 25**	N/A
LPPI	N/A	**0.008 / 3.4**



ARUP

Existing Condition

Appendix HYD-B

1-yr 24-hr Storm Peak Flow (cfs / gpm)	1-yr 24-hr Storm 24-hr Vol. Discharged (gal)	2-yr 24-hr Storm Peak Flow (cfs / gpm)	2-yr 24-hr Storm 24-hr Vol. Discharged (gal)
13.5 / 6,070	828,420	16.7 / 7,490	908,870

Conforming Flows For Proposed Conditions

Appendix HYD-B

Scenarios	Flow Types	1-yr 24-hr Storm Peak Flow (cfs / gpm)	1-yr 24-hr Storm 24-hr Vol. Discharged (gal)	2-yr 24-hr Storm Peak Flow (cfs / gpm)	2-yr 24-hr Storm 24-hr Vol. Discharged (gal)
Existing Condition	Sewer	0.2 / 97	139,780	0.2 / 97	139,780
	Stormwater	13.3 / 5,970	688,640	16.5 / 7,390	769,090
	CSS Total	**13.5 / 6,070**	**828,420**	**16.7 / 7,490**	**908,870**
Future Condition (CPHP EIR Conformance)	Sewer	0.4 / 180	259,850	0.4 / 180	259,850
	Stormwater, Offset to Match Ex. CSS	13.1 / 5,890	568,570	16.3 / 7,310	649,020
	CSS Total Allowed	**13.5 / 6,070**	**828,420**	**16.7 / 7,490**	**908,870**

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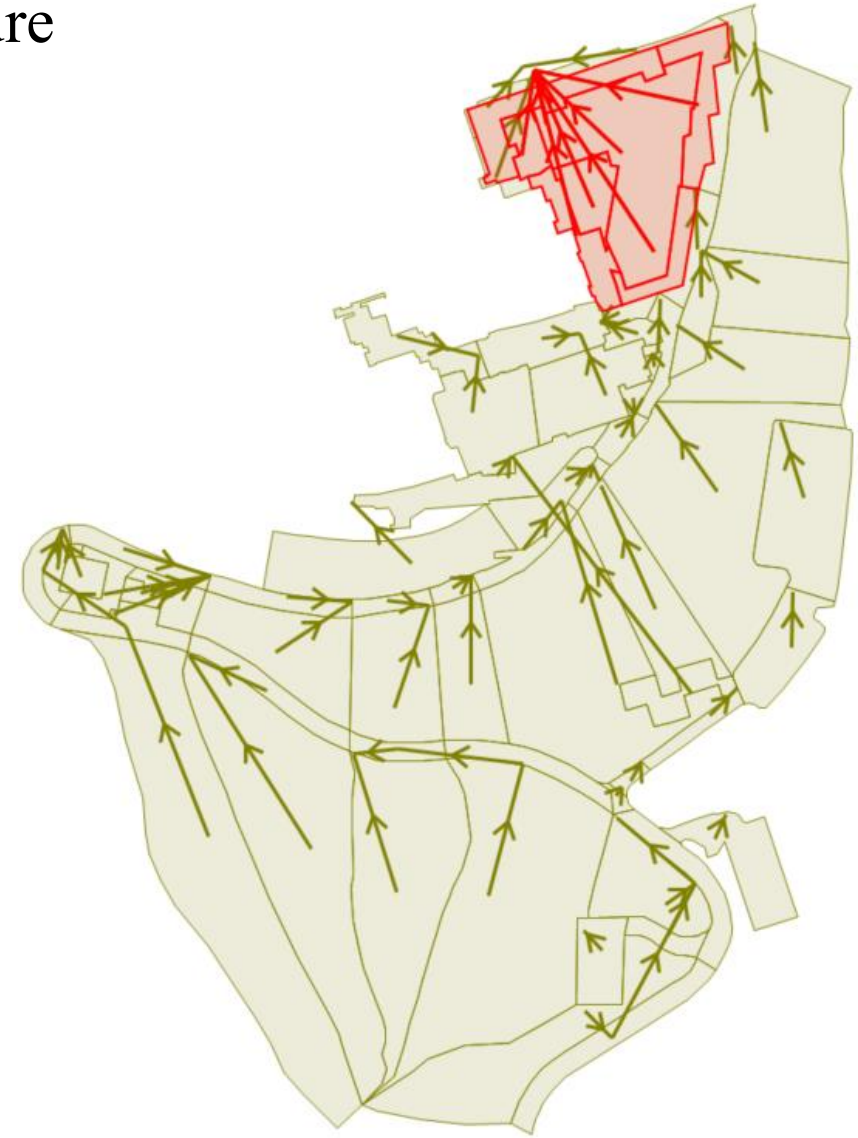
NHPH Changes

1. Replace LPPI Building and surrounding area with NHPH Building
2. Reroute existing 15” CSS line along west side of LPPI to Medical Center Way
3. Add Medical Gas Replacement Tank site

Stormwater Watershed Comparison

- Existing

- Future



Stormwater Watershed Comparison

Appendix HYD-B

- Not a large change in watershed surface conditions
  - Increase in flow will be mainly driven by sewer

Land Type	Existing Condition (acres)	Future Condition (acres)
Forest	13.8	13.6
Landscaping/ Greenroof	0.4	0.7
Road / Roof	7.4	7.3
Total	**21.6**	**21.6**

CSS System Changes

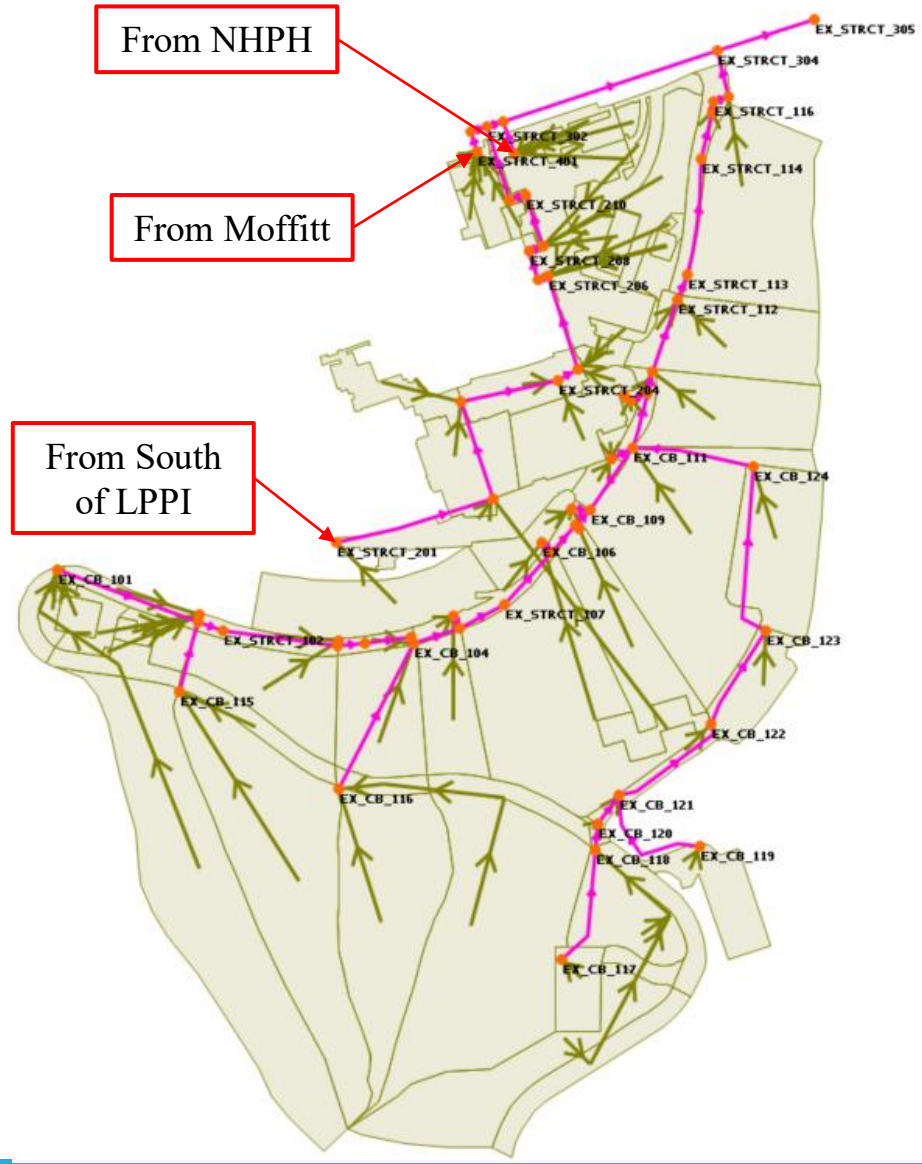
- Existing

- Future

ARUP

Future Condition Base Sewer Flows

Sewer Flow Location	Sewer Flow from Flow Monitoring Data (cfs / gpm)	Projected Sewer Flow from Water Demand Data (cfs / gpm)
Moffitt	**0.054 / 69**	N/A
South of LPPI	**0.055 / 25**	N/A
NHPH	N/A	**0.193 / 87**



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Future Condition (No Storage)

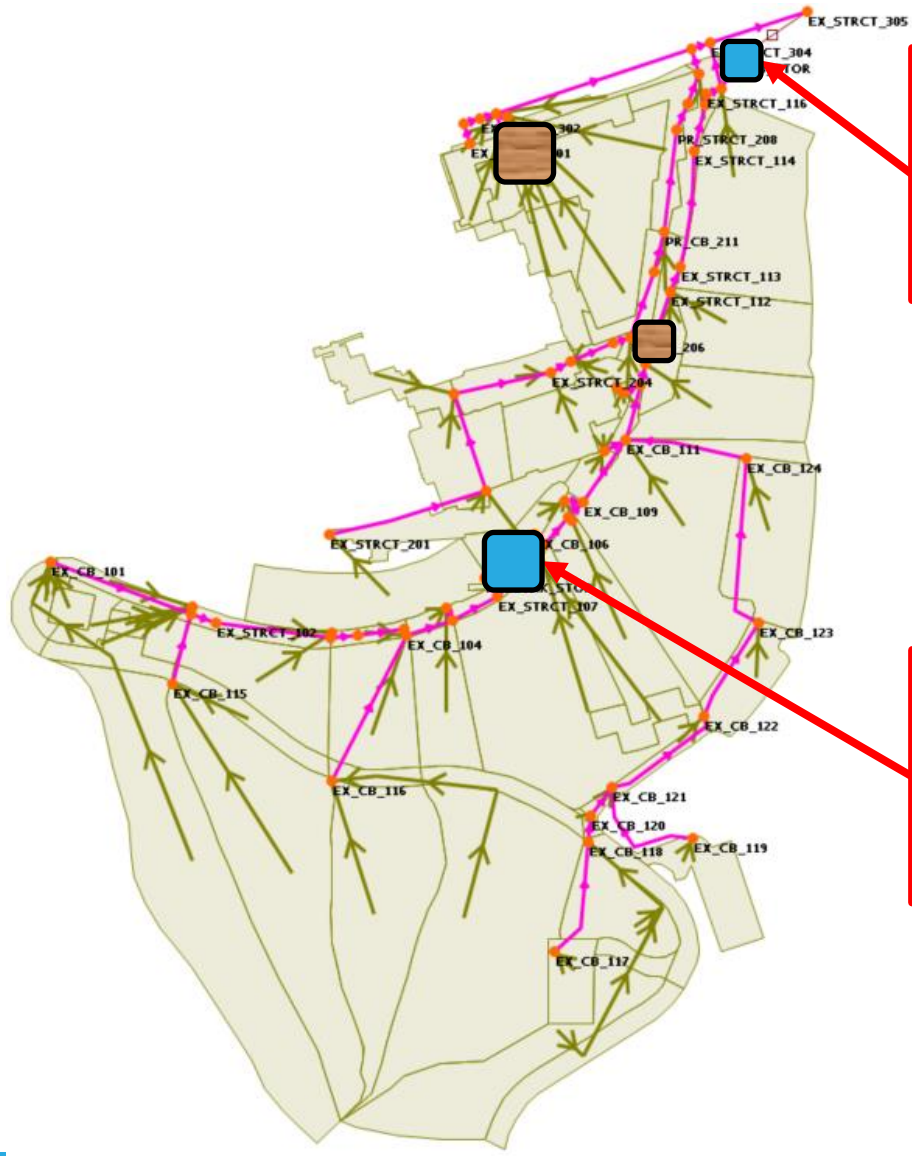
1-yr 24-hr Storm Peak Flow (cfs / gpm)	1-yr 24-hr Storm 24-hr Vol. Discharged (gal)	2-yr 24-hr Storm Peak Flow (cfs / gpm)	2-yr 24-hr Storm 24-hr Vol. Discharged (gal)
14.6 / 6,570	971,710	17.8 / 7,980	1,053,660

Existing and Future Conditions Comparison

Appendix HYD-B

Condition	1-yr 24-hr Storm Peak Flow (cfs / gpm)	1-yr 24-hr Storm 24-hr Vol. Discharged (gal)	2-yr 24-hr Storm Peak Flow (cfs / gpm)	2-yr 24-hr Storm 24-hr Vol. Discharged (gal)
Existing	13.5 / 6,070	828,420	16.7 / 7,490	908,870
Future (No Storage)	14.6 / 6,570	971,710	17.8 / 7,980	1,053,660
Reduction Required	**1.1 / 500**	**143,290**	**1.1 / 490**	**144,790**

Future Storage Locations



Ammonia Site:
30,000 gal Future Storage Required
- Pump to SFPUC Main

Existing Fuel Tanks:
120,000 gal Existing Available Storage
- Use all 120,000 gal
- Gravity flow back to Ex. CSS line

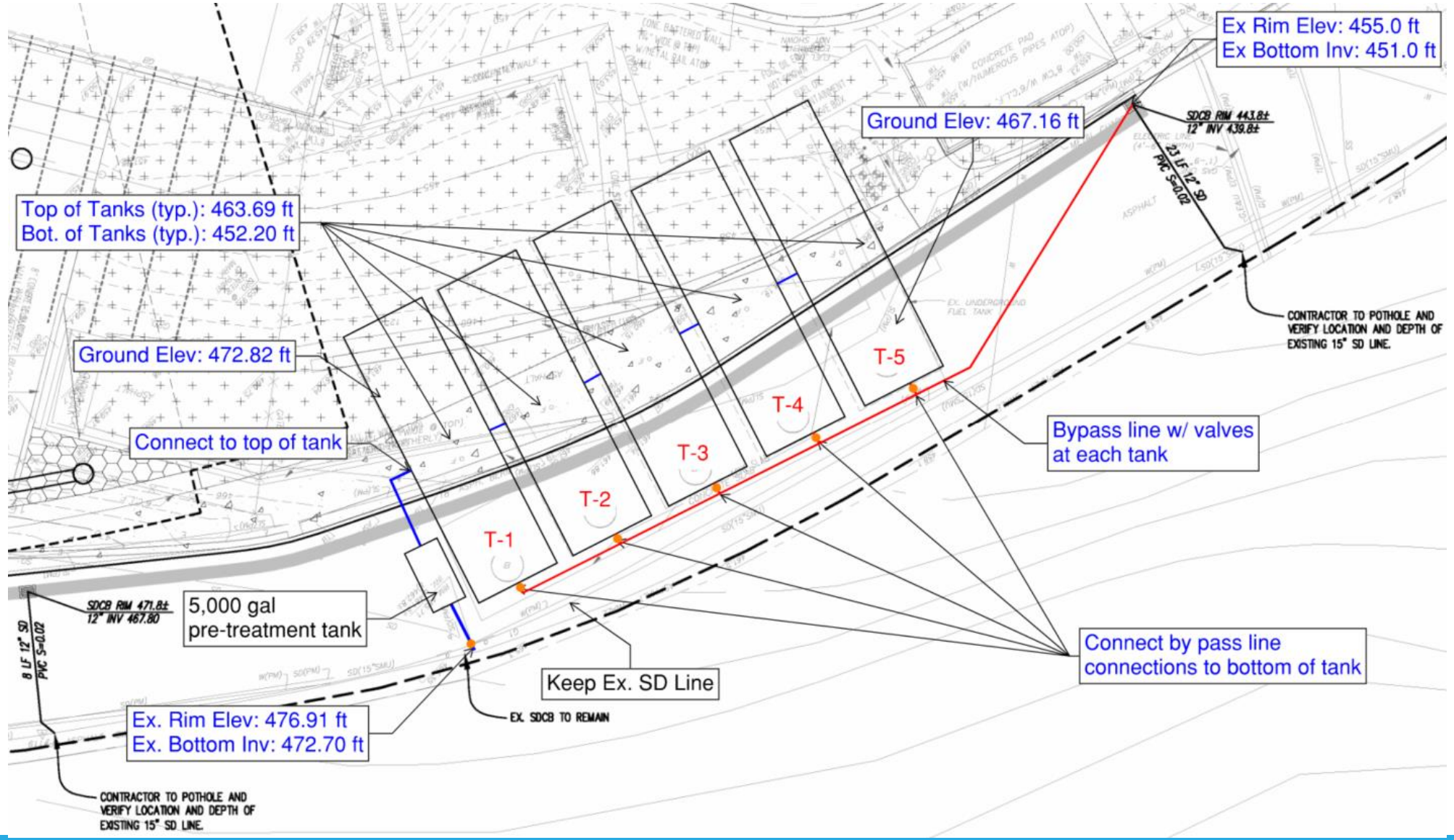
- Additional potential storage not required for EIR Requirements:
  - NHPH Basement: 200,000 gal set aside for tank
  - Medical Gas Replacement Tank Site: 6,000 gal

Fuel Tank Storage – 120,000 gal

- Assuming 4 tanks out of 5 are available for storage (4 x 30,000 gal = 120,000 gal)
- If 5th tank can be used, total storage utilized = 150,000 gal
  - Potential to remove need for any additional storage

Fuel Tank Storage Layout (with 5 tanks)

Appendix HYD-B



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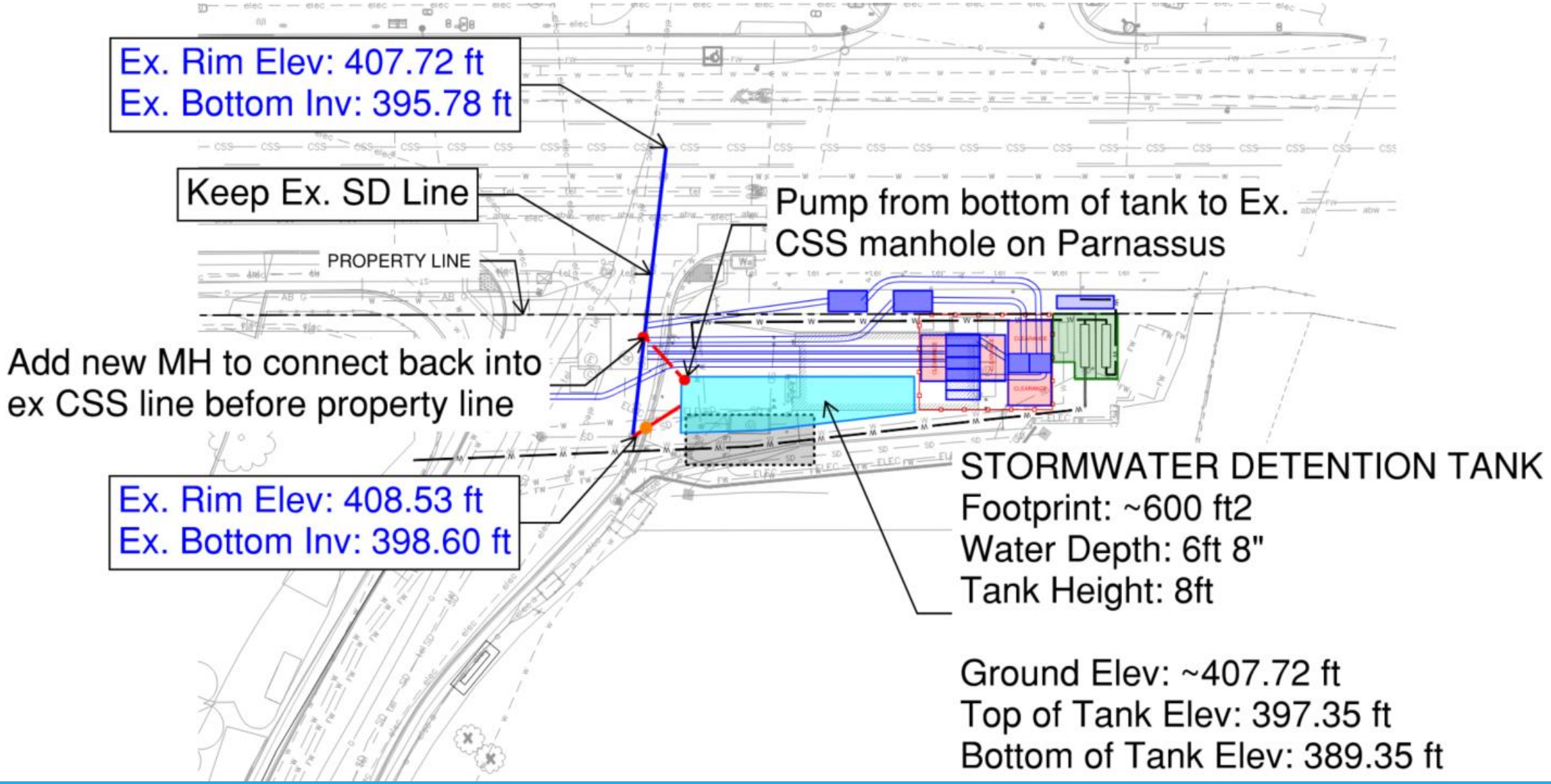
Ammonia Site Storage Layout– 30,000 gal



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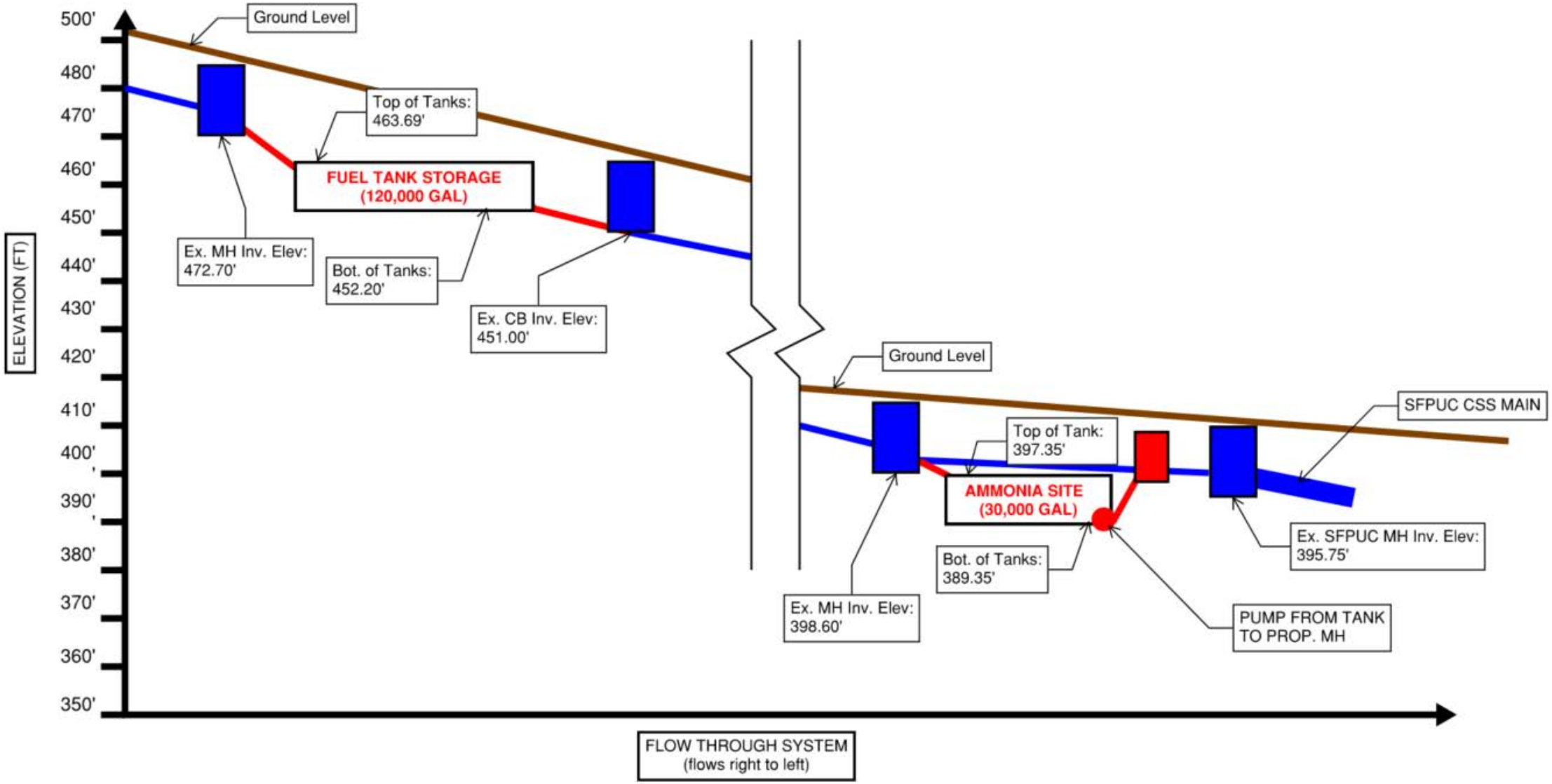
Storage System Profile

Appendix HYD-B



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Future Condition With Storage

Scenario	1-yr 24-hr Storm Peak Flow (cfs / gpm)	1-yr 24-hr Storm 24-hr Vol. Discharged (gal)	2-yr 24-hr Storm Peak Flow (cfs / gpm)	2-yr 24-hr Storm 24-hr Vol. Discharged (gal)
Existing / Allowable	13.5 / 6,070	828,420	16.7 / 7,490	908,870
Future (with Storage)	**11.9 / 5,320**	**819,680**	**14.6 / 6,530**	**902,220**

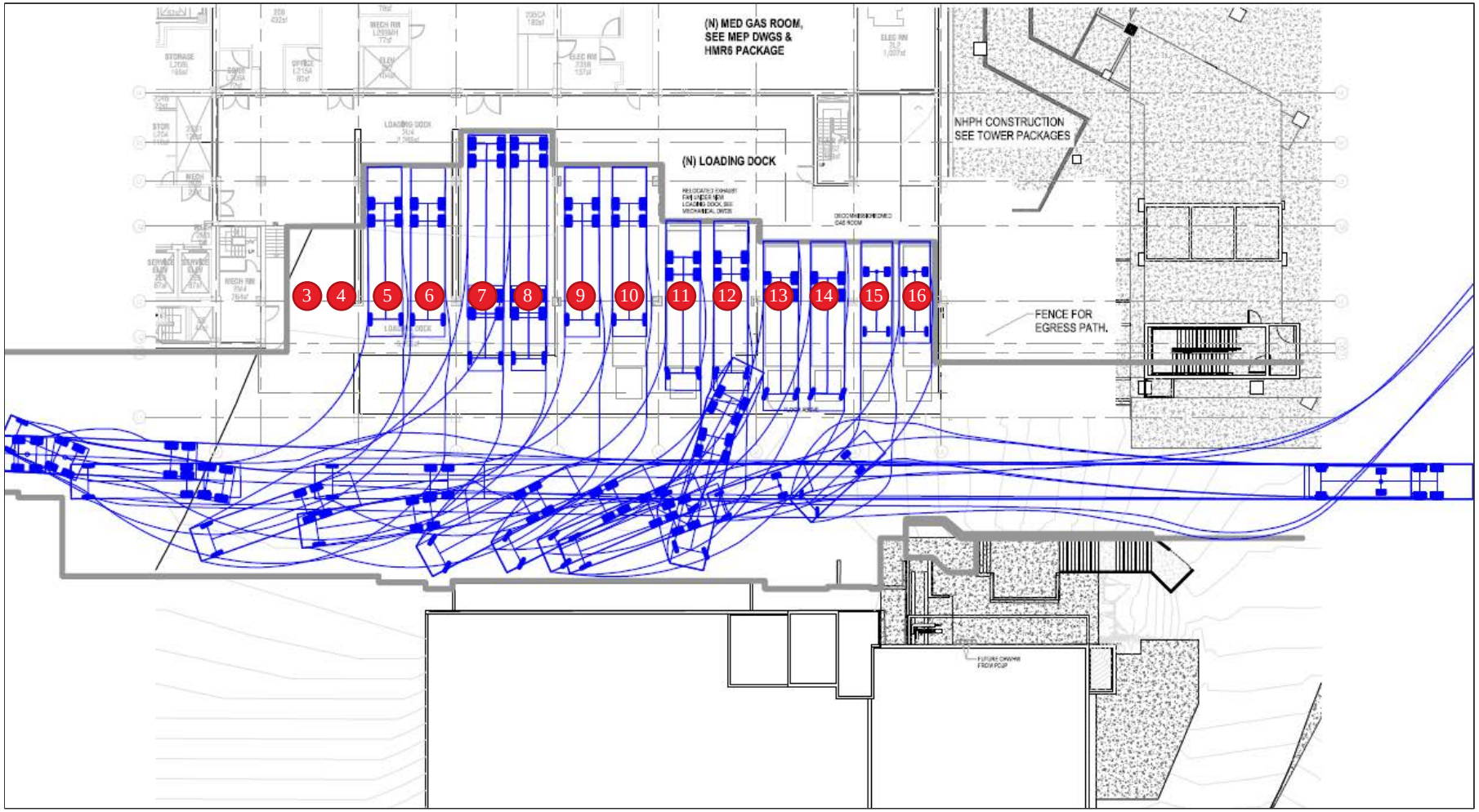
- Model findings:
  - Future peak flow is below existing
  - Future volume discharged will be slightly lower than existing

Questions and Discussion

Appendix TRANS-A
Truck Turning Templates

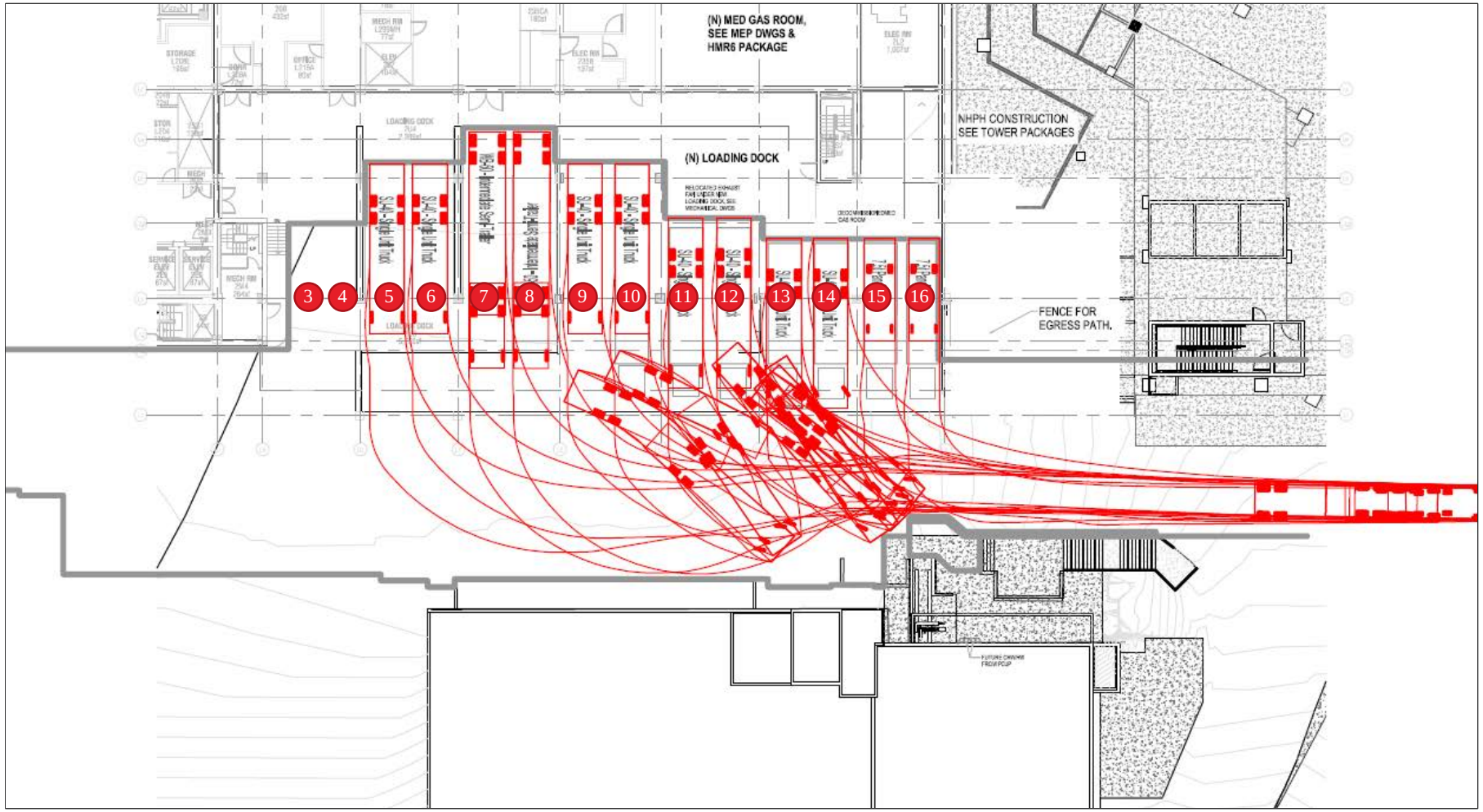
Option 1

Inbound Vehicle Paths



Option 1

Outbound Vehicle Paths



Loading Bay Assignment

Bay	Function	Date online	Maximum vehicle size	Notes
1	General loading	Currently operational	SU-40 (40’ truck)	
2	Food waste compactor	Currently operational	SU-40 (40’ truck)	
	Landfill compactor/San-i-pak	Currently operational	SU-40 (40’ truck)	San-i-pak has two chambers for landfill/biomedical waste and mixed recycling
3	Sharps bins	Currently operational	SU-40 (40’ truck)	
4	Cardboard compactor	Currently operational	SU-40 (40’ truck)	Cardboard is not recycled with other mixed recycling
5	General loading	Currently operational	SU-40 (40’ truck)	
6	General loading	Currently operational	SU-40 (40’ truck)	
7	General loading	Currently operational	WB-50 (tractor trailer)	
8	General loading	Currently operational	WB-50 (tractor trailer)	
--	Construction and debris	Currently operational	SU-40 (40’ truck)	
9	General loading	2030 (full depth)	SU-40 (40’ truck)	Platform demolition delay until 2030 (3-6 months construction)
10	General loading	2030 (full depth)	SU-40 (40’ truck)	Platform demolition delay until 2030 (3-6 months construction)
11	General loading	2030	SU-40 (40’ truck)	
12	General loading	2030	SU-40 (40’ truck)	
13	General loading	2028	SU-40 (40’ truck)	
14	General loading	2028	SU-40 (40’ truck)	
15	General loading	2028	Van	Reduced clearance
16	General loading	2028	Van	Reduced clearance
17A	San-i-pak (biomedical waste)	2030	34’ Roll-off compactor truck	
17B	Linen and specialist waste	2030	SU-40 (40’ truck)	All non-compacted streams
18	Landfill compactor	2030	34’ Roll-off compactor truck	
19	Organics compactor	2030	34’ Roll-off compactor truck	

34' dumpster truck exhibit

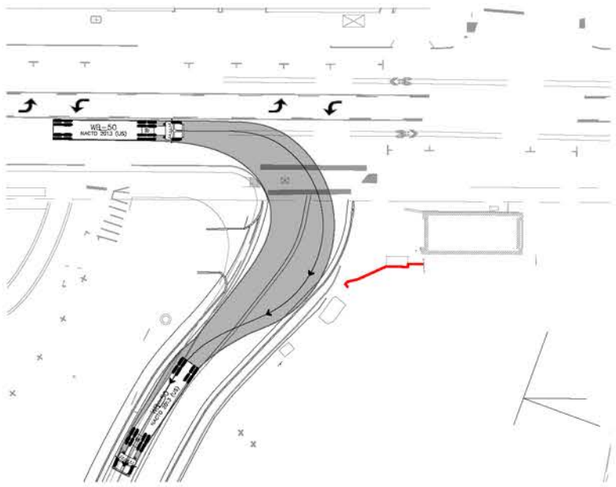
34'dumpster truck exhibit

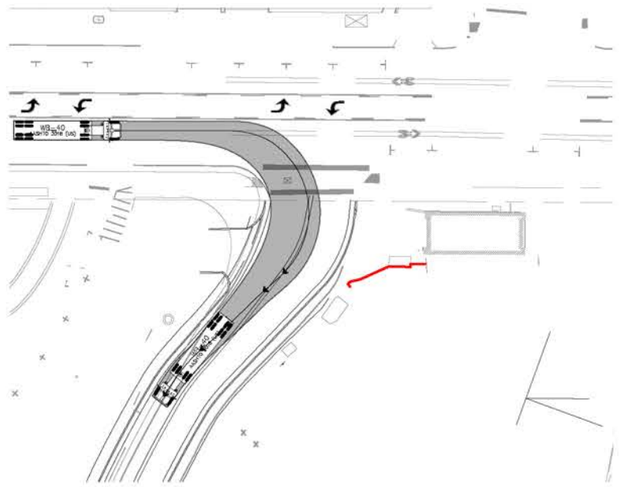
Appendix TRANS-A

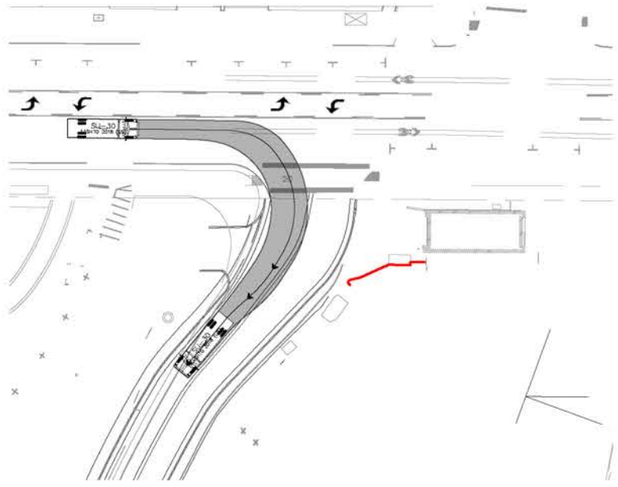
34'dumpster truck exhibit

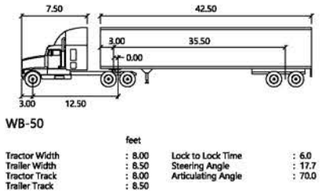
WB-40 trailer exhibit

WB-40 trailer exhibit



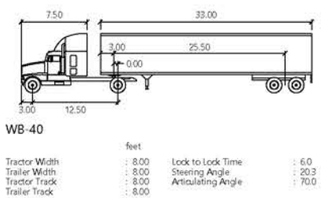






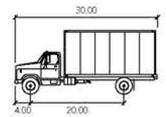
WB-50

feet			
Tractor Width	: 8.00	Lock to Lock Time	: 6.0
Trailer Width	: 8.50	Steering Angle	: 17.7
Tractor Track	: 8.00	Articulating Angle	: 70.0
Trailer Track	: 8.50		



WB-40

feet			
Tractor Width	: 8.00	Lock to Lock Time	: 6.0
Trailer Width	: 8.00	Steering Angle	: 20.3
Tractor Track	: 8.00	Articulating Angle	: 70.0
Trailer Track	: 8.00		



SU-30

feet	
Width	: 8.00
Track	: 8.00
Lock to Lock Time	: 6.0
Steering Angle	: 31.8

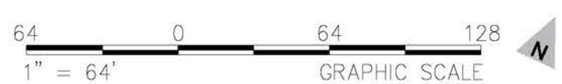
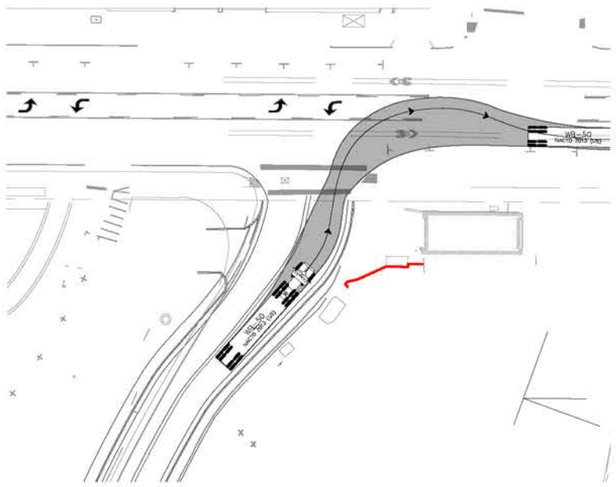
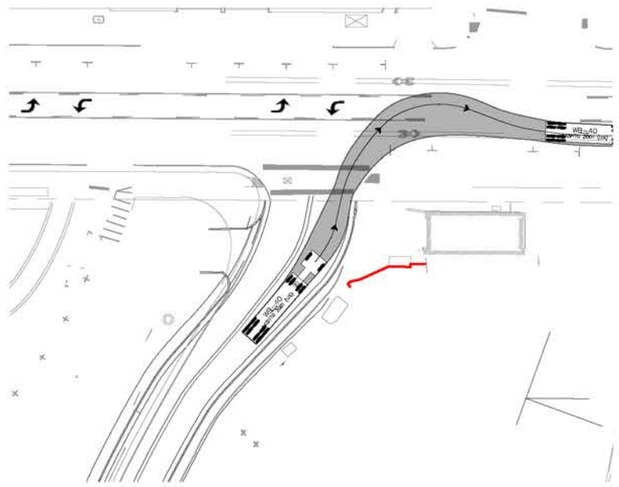


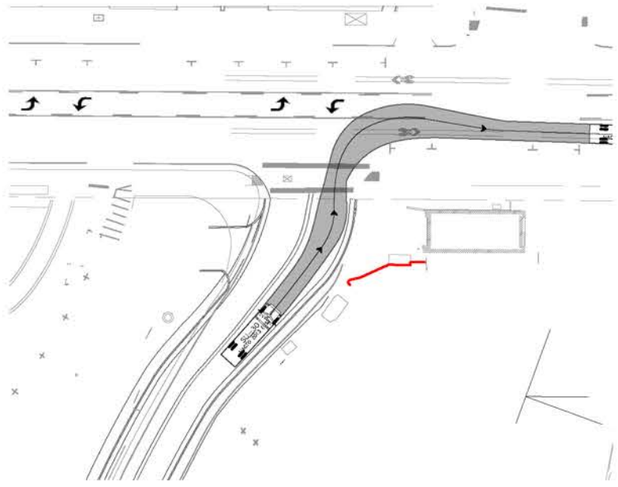
Figure 1

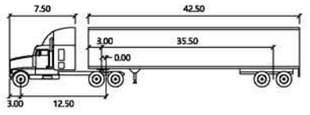
UCSF NHPH
Medical Center Way
Right-turn from Parnassus

NOT FOR CONSTRUCTION. ADDITIONAL
DETAILED ANALYSIS AND ENGINEERING DESIGN REQUIRED.



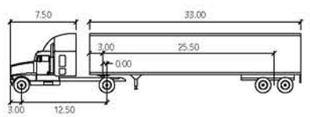






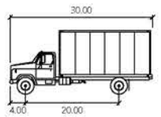
WB-50

	feet		
Tractor Width	: 8.00	Lock to Lock Time	: 6.0
Trailer Width	: 8.50	Steering Angle	: 17.7
Tractor Track	: 8.00	Articulating Angle	: 70.0
Trailer Track	: 8.50		



WB-40

	feet		
Tractor Width	: 8.00	Lock to Lock Time	: 6.0
Trailer Width	: 8.00	Steering Angle	: 20.3
Tractor Track	: 8.00	Articulating Angle	: 70.0
Trailer Track	: 8.00		



SU-30

	feet
Width	: 8.00
Track	: 8.00
Lock to Lock Time	: 6.0
Steering Angle	: 31.8

64 0 64 128 N

1" = 64' GRAPHIC SCALE

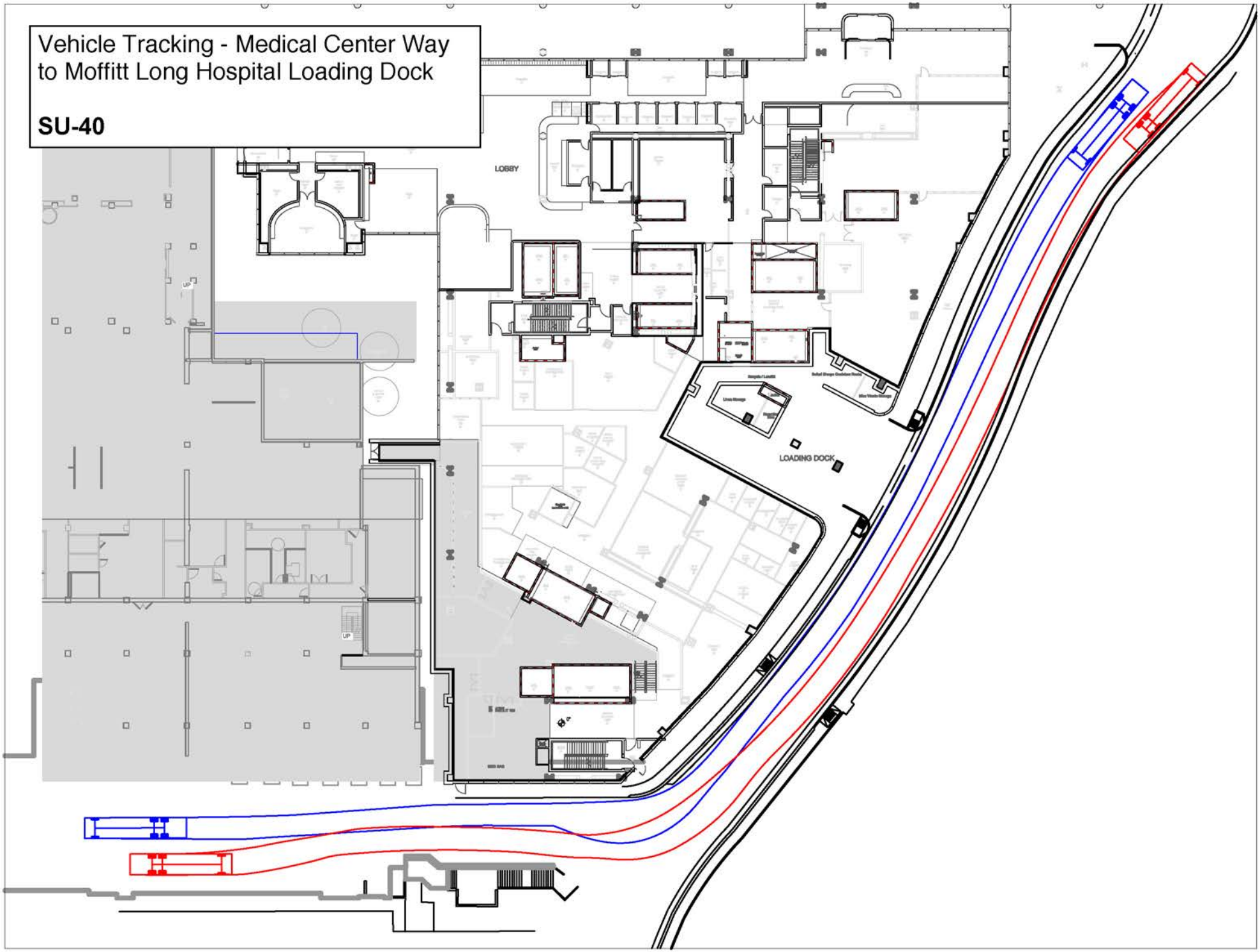
Figure 2

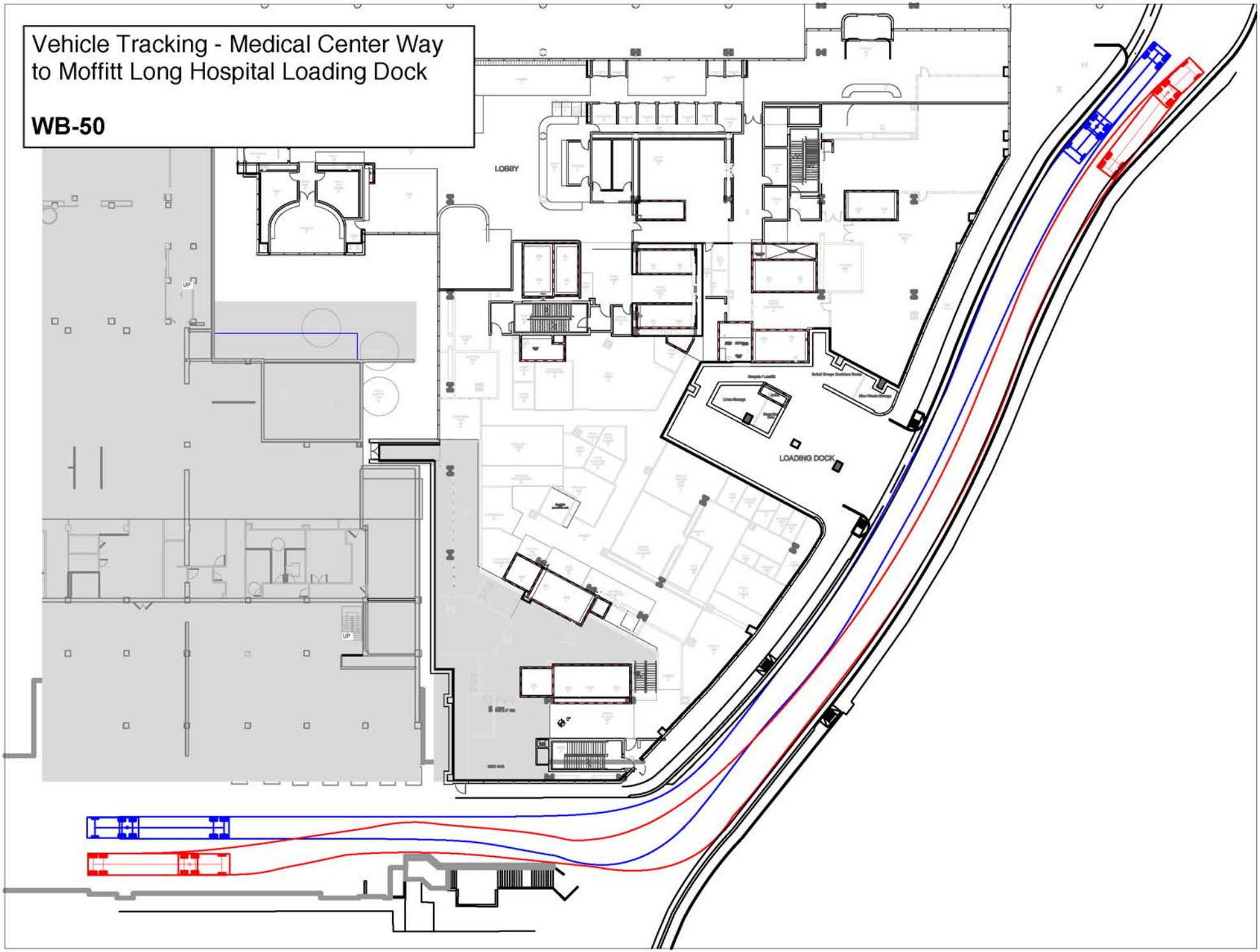
UCSF NHPH

Medical Center Way

Right-turn onto Parnassus

NOT FOR CONSTRUCTION. ADDITIONAL
DETAILED ANALYSIS AND ENGINEERING DESIGN REQUIRED.


Vehicle Tracking - Medical Center Way
to Moffitt Long Hospital Loading Dock
SU-40
LOBBY
LOADING DOCK


Vehicle Tracking - Medical Center Way
to Moffitt Long Hospital Loading Dock
WB-50
LOBBY
LOADING DOCK